Study programme
ARCHITECTURE

Curriculum for New Long-cycle

[5+0]

Studijski program
ARHITEKTURA

Integrisane studije arhitekture

[5+0]

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKE KONSTRUKCIJE 1**
Course title:	**ARCHITECTURAL STRUCTURES 1**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
1.1.	**obavezan / required**	**I**	**5.0**	**2P+1V+1L**

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

Uslovljenost drugim predmetima:

Nemau slovljenosti.

Prerequisites:

No prerequisites.

Ciljeviizučavanjapredmeta:

Sticanje znanja o konstruktivnim sklopovima i elementima zgrada, sa orijentacijom na masivni konstruktivni sistem: zidovi (karakteristični materijali i elementi), vertikalni zidani kanali, temelji, hidroizolacija, međuspratne konstrukcije (armiranobetonske – sitnorebraste), podne i plafonske konstrukcije.

Course aims:

Gaining knowledge about the structural components and building elements, with the orientation to the massive structural system: the walls (typical materials and elements), vertical masonry canals, foundations, insulation, floor structures (reinforced concrete – fine ribbed), floor and ceiling construction.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Red. Prof. dr Dušan Vuksanović
	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, interaktivna nastava, vježbe, konsultacije,semestralni rad.

Teaching methods and learning activities:

Lectures, exercises, interactive education, consultations, semestral work.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvod: pojmovi o zgradi, konstruktivni sistemi, izrada projekata
II nedjelja	Vertikalni konstruktivni elementi/sklopovi - zidani zidovi: opšte karakteristike; Tradicionalni zidovi: zidovi od opeke i zidovi od kamena
III nedjelja	Zidovi od šupljih blokova - opekarskih i betonskih - primjena modularne koordinacije u zidanju; Zidovi od blokova od lakih betona - blokovi sa različitim vrstama agregata
IV nedjelja	Vertikalni zidani kanali u zgradama: dimnjaci i ventilacioni kanali
V nedjelja	Temelji: osnovne vrste tla, podjele temelja
VI nedjelja	Trakasti temelji sa zidanim stopama i stopama od betona
VII nedjelja	*KOLOKVIJUM I*
VIII nedjelja	Hidroizolacija: Izolacija od podzemne vlage i podzemne vode
IX nedjelja	Horizontalni konstruktivni elementi/sklopovi – armiranobetonske MK: osnovni principi
X nedjelja	Parametri izbora sistema MK - veličina raspona,

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction: terms concerning building structural systems, making project
2nd week	Vertical structural elements / assemblies - built walls: general characteristics; Traditional walls: brick walls and walls of stone
3rd week	The walls of hollow blocks - brick and concrete - applications of modular coordination in masonry structures; walls of blocks of lightweight concrete - blocks with different types of aggregates
4th week	Vertical canals built into buildings: chimneys and vents
5th week	Foundations: basic soil types, dividing the ground
6th week	Strip foundations with brick rate and the concrete
7th week	1st TEST (colloquium)
8th week	Hydro insulation: Insulation of ground moisture and groundwater
9th week	Horizontal structural elements / assemblies - reinforced ceilig structures: basic principles
10th week	Parameters of choice of ceiling structures - size

	način oslanjanja, tehnologija izvođenja
XI nedjelja	Sitnorebraste MK: oslonjene u jednom i u dva pravca - monolitne, polumontažne i montažne
XII nedjelja	Podne i plafonske konstrukcije
XIII nedjelja	*KOLOKVIJUM II*
XIV nedjelja	Predaja elaborata sa vježbama; analiza II kolokvijuma
XV nedjelja	*Završni ispit*
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i prijem elaborata (drugi rok).
XVIII-XXI nedjelja	

	range, the way to rely, construction technology
11th week	Fine ribbed ceiling structures: supported in one and two directions - monolithic, semi-prefabricated and prefabricated
12th week	Floor and ceiling construction
13th week	2nd TEST (colloquium)
14th week	Hydroinsulation: Insulation of ground moisture and groundwater
15th week	FINAL EXAM
16th week	Verification of the semester and mark enrollment.
17th week	Submission and defense of the final work. *Additional lessons and submission of graphic elaborate (second term)*
18th-21st week	

Opterećenje studenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta

struktura:

2 sata predavanja
1sata vježbanja
1 sat laboratorijskih vježbanja
2sat i**40**min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)=**13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes

Structure:

2hours of lectures
1hour for tutorial
1 hour for laboratory
2 hours and **40**minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload:106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

Literatura / Literature:

- Prof. dr Božidar Đ. Milić: "Elementi i konstrukcije zgrada", UCG Građevinski fakultet, Podgorica, 1999.
- Prof. dr Ranko Trbojević: "Arhitektonske konstrukcije - Masivni konstruktivni sklop", Beograd, 2003.
- Petar K. Krstić: "Arhitektonske konstrukcije" 1 i 2, Naučna knjiga, Beograd, 1984.

Dopunska literatura/ Additional literature:

- F. Čing, K. Adams: "Ilustrovani primjeri konstrukcija", Građevinska knjiga, Beograd, 2007.
- Đuro Peulić: "Konstruktivni elementi zgrada" I i II dio, Tehnička knjiga, Zagreb, 1980.

Oblici provjere znanja i ocjenjivanje:

- prisustvo na nastavi: 4 - 6 poena
- 4 semestralni grafički rad: 13 - 24 poena
- 2 kolokvijuma: 34 - 70 poena
- završni ispit : ≤ 50 poena
- **Prelazna ocjena: min. 50 poena**

Forms of Assessment:

- Presence in classes: 4 - 6 points
- 4 semester graphic work: 13-24 points
- 2 tests: 34 - 70 points
- Final exam: ≤ 50 points
- **The passing grade: min. 50 points**

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Arhitektonske konstrukcije I:
1. Poznaje osnove konstruktivnih sistema i sposoban je da procijeni i odabere adekvatno konstruktivno konstuktivno i građevinsko rješenje, kao i odgovarajuće rješenje materijalizacije, u skladu sa arhitektonskim projektom.;
2. Ima sposobnost da sintezno koristi znanje iz konstruktivne i građevinske tematike, , u procesu projektovanja.

Expected learning outcomes:

It is expected that the student after passing the exam Architectural Structures I:
1. Knows the basics of structural systems and is able to evaluate and choose appropriate and constructive building 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 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)

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).

Napomena:

Admonishment:

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**CRTANJE**
Course title:	**DRAWING**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
1.7.	**obavezan / required**	**I**	**3.0**	**1P+2V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Upoznavanje studenata sa osnovnim tehnikama slobodoručnog crtanja, i značaju i primjeni kroz arhitektonsku praksu.

Course aims:

Students are introduced to to the basic techniques of free hand drawing, and the importance and implementation in architectural practice.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	FLU_1 nastavnik
	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe i crtanje na terenu.

Teaching methods and learning activities:

Lectures, exercises and drawing on the outside.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Istorijska pojava crteža.
II nedjelja	Važnost crteža u likovnim umjetnostima.
III nedjelja	Istorijski pregled crteža - globalno.
IV nedjelja	Važnost crteža u arhitekturi.
V nedjelja	Crtež, kompozicija, umjetničko djelo.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Historical phenomenon of drawings.
2nd week	The importance of drawing in the fine arts.
3rd week	Historical overview of drawings - globally.
4th week	The importance of drawing in architecture.
5th week	Drawing, composition and art.

VI nedjelja	Dvodimenzionalni crtež, trodimenzionalni, prostorni crtež.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Crtačke tehnike discipline. Crtanje u eksterijeru, kontinentalni i planinski motivi.
IX nedjelja	Crno-bijeli crtež. Crtanje u eksterijeru, primorski motivi.
X nedjelja	Crtanje pitomih, domaćih i divljih životinja
XI nedjelja	Crtanje tehničkih naprava i prevoznih sredstava
XII nedjelja	Izučavanje perspektive, geometrijske, slikarske (žablja, ptičija)
XIII nedjelja	Izučavanje perspektive, geometrijske,slikarske(žablja,ptičija)
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	*Prijem elaborata (prvi rok).*
XVI nedjelja	*Ovjera semestra i upis ocjena.*
XVII nedjelja	*Dopunska nastava i prijem elaborata (drugi rok).*
XVIII-XXI nedjelja	

6th week	Two-dimensional drawing, three-dimensional, spatial drawing.
7th week	1st TEST (colloquium)
8th week	Drawing technique. Drawing on the outside, continental and mountain motifs.
9th week	Black-and-white drawing. Drawing on the outside, a coastal motifs.
10th week	Drawing of domestic and wild animals.
11th week	Drawing of technical devices and vehicles.
12th week	The study of perspective, geometry, painting (frog, bird).
13th week	The study of perspective, geometry, painting (frog, bird).
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM - Admission graphic elaborate (first term).
16th week	Verification of the semester and mark enrollment.
17th week	*Additional lessons and admiddion graphic elaborat (second term)*
18th-21st week	

Opterećenje studenata:

Nedjeljno

3.0 kredita x 40/30 = 4 sata
Struktura:
1 sata predavanja
2 sat vježbi
1 sat samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: 4 sata x 16 = 64 sata
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x 4 sata = 8 sati

Ukupno opterećenje za predmet 3.0 x 30 = 90 sati

Dopunski rad : **18 sati**
Struktura opterećenja:
64sata (Nastava)+ 8 sati (Priprema)+ 18 sati. (Dopunski rad)

Student workload:

Weekly

3.0 credits x 40/30 = 4 hours
Structure:
1 hour of lectures
2 hour for tutorial
1 hour of individual work, including consultations

During the semester

Teaching and the final exam:(4 hours) x 16 =64 hours
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (4 hours) = **8 hours**

Total hours for the course: 3.0x30 = **90 hours**

Additional hours: 18 hours
Structure of workload:
64 h (lectures)+ 8 h (preparation) + 18 h (add. hours) =90 hours

Literatura / Literature:

- Bert Dodson, "Keys to Drawing" , North Light Books, 1990
- Živojin Turinski, "Slikarska tehnologija", Univerzitet umijetnosti, Bgd, 1990.
- Brajan Bagnal, "Crtanje i slikanje", Jugoslovenska knjiga, Beograd, 1995.
- Miško Šuvaković, "Pojmovnik moderne i postmoderne likovne umjetnosti i teorije poslije 1950. godine", Srpska akademija nauka i umjetnosti, Beograd-Novi Sad, 1999.
- Phil Metzger "Pencil Magic", North Light Books, 2004
- Natalia Tizon, "Art of Sketching" , Sterling Publishing Company, Inc., 2007.
- Nick Meglin, "Drawing From Within: Unleashing Your Creative Potentia", North Light Books, 2008
- John Ruskin, „The Elements of Drawing", Dover Publications, Incorporated, 2012.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen grafički elaborat

- Uredno pohađanje nastave : ukupno 10 poena
- I kolokvijum: maximum 20 poena
- II kolokvijum: maksimum 20 poena
- graficki elaborate: ukupno 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.

- Regular attendance of classes: 10 points
- First test: maximum 20 points
- Second test: maximum 20 points
- Graphic elaborate: maximum 50 points

Očekivani ishodi učenja:

Očekuje se daće studenti nakon položenog ispita Crtanje imati znanja o:

1. Osnovnim tehnikama slobodoručnog crtanja,
2. Značaju i primjeni vizuelnih umjetnosti i njihovom uticaju na arhitekturu.

Expected learning outcomes:

Drawing
It is expected that students after passing the exam Drawing have knowledge of:
1. Basic techniques of drawing,
2. Importance and application of the visual arts and their impact on architecture.

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:

Methods for assessing the quality and ensuring preferred learning outcomes:

Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).

Napomena:	**Admonishment:**
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.	Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKE KONSTRUKCIJE 2**
Course title:	**ARCHITECTURAL STRUCTURES 2**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
2.1.	**obavezan / required**	**II**	**5.0**	**2P+1V+1L**

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

Uslovljenost drugim predmetima:

Nemauslovljenosti.

Prerequisites:

No prerequisites.

Ciljeviizučavanjapredmeta:

Analiza konstruktivnih i funkcionalno-tehničkih sklopova i elemenata zgrade masivnog konstruktivnog sistema čiji je cilj da sa sadržajima AKI zaokruži teme vezane za zgradu masivnog sistema kao cjelinu. Nastavni okvir obuhvata: otvore u zidovima – vrata i prozore, vertikalne komunikacije u zgradama – stepenice, rampe i liftove, kose krovove – drvene krovne konstrukcije, pokrivanje krovova, i konstrukcije ravnih krovova.

Course aims:

Analysis of structural and functional and technical assemblies and elements of building massive structural system whose goal is to round up the contents of topics of Architectural structures II related to building a massive system as a whole. The collar includes: holes in walls - doors and windows, vertical communication in buildings - stairs, ramps and lifts, sloped roofs - wooden roofs, roofing, flat roofs and structures.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Prof. dr Dušan Vuksanović AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, interaktivna nastava, vježbe, konsultacije,semestralni rad.

Teaching methods and learning activities:

Lectures, exercises, interactive education, consultations, semestral work.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvod; Armiranobetonske međuspratne konstrukcije za veće raspone i opterećenja (I): rebraste tavanice “T”- presjeka
II nedjelja	Armiranobetonske međuspratne konstrukcije za veće raspone i opterećenja (II): pločaste tavanice
III nedjelja	Otvori – prozori: konstrukcije prozora, ugrađivanje prozora, konstrukcije nadprozornika, aspekti primjene različitih materijala (drvo, aluminijum, PVC)
IV nedjelja	Otvori – vrata: konstrukcije vrata, načini ugrađivanja vrata, konstrukcije nadvratnika, aspekti primjene različitih materijala (drvo, aluminijum, PVC)
V nedjelja	Vertikalne komunikacije u zgradama – stepenice (I): konstruktivna rješenja stepeništa - tipologija

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction, reinforced-concrete structural ceiling structures for greater spans and load (s): ribbed ceilings "T" - section
2nd week	Reinforced concrete floor structure for large spans and loads (II): The ceiling plate
3rd week	Openings - windows: structure window, window installation, window lintel construction, aspects of the application of different materials (wood, aluminum, PVC)
4th week	Openings - door: door structure, ways of incorporating the door lintel construction, aspects of the application of different materials (wood, aluminum, PVC)
5th week	Vertical communication in buildings - stairs (I): constructive solutions staircase - typology

	konstrukcija, proračun stepeništa,		construction, calculation steps,
VI nedjelja	Vertikalne komunikacije u zgradama – stepenice (II): armirano-betonske konstrukcije stepeništa, metalne i drvene stepenice, oblaganje stepeništa i stepenišne ograde, rampe i liftovi.	6th week	Vertical communication in buildings - steps (II): reinforced concrete staircases, metal and wooden stairs, lining stairs and stair railings, ramps and lifts.
VII nedjelja	*KOLOKVIJUM I*	7th week	1st TEST (colloquium)
VIII nedjelja	Kosi krovovi – krovne konstrukcije (I): pojmovi, konstruktivni principi, tradicionalni krovovi od rezane građe, tipologija krovnog vezača, krovovi na raspinjače; analiza I kolokvijuma	8th week	Pitched roofs - roof structure (I): concepts, structural principles, the traditional roofs of timber, types of roof trusses, analysis of first test
IX nedjelja	Kosi krovovi – krovne konstrukcije (II): krovovi na rožnjače, krovovi na vješaljke	9th week	Pitched roofs - roof structure (II): The roof of the cornea, the roof of hanger
X nedjelja	Krovni pokrivači: od prirodnih materijala, od pečene gline, od različitih vrsta lima, od bitumenskih proizvoda; uslovi primjene i izvođenje	10th week	Roofing: natural materials, of baked clay, of different types of steel, of bituminous products; terms of implementation and performance
XI nedjelja	Ravni krovovi: način odvodnjavanja, zaštita od atmosferskih uticaja – sastav konstrukcije ravnog krova	11th week	Flat roofs: the way of drainage, protection from weather conditions - composition flat roof
XII nedjelja	Ravni krovovi: uslovi ispravnog funkcionisanja ravnog krova, završeci i prodori ravnog krova	12th week	Flat roofs: the conditions proper functioning of a flat roof, endings and the flat roof penetrations
XIII nedjelja	*KOLOKVIJUM II*	13th week	2nd TEST (colloquium)
XIV nedjelja	Predaja elaborata sa vježbama; analiza II kolokvijuma	14th week	Submission of elaborate with exercises, analysis of second test
XV nedjelja	*Završni ispit*	15th week	FINAL EXAM
XVI nedjelja	Ovjera semestra i upis ocjena.	16th week	Verification of the semester and mark enrollment.
XVII nedjelja	Dopunska nastava i prijem elaborata (drugi rok).	17th week	Submission and defense of the final work. *Additional lessons and submission of graphic elaborate (second term)*
XVIII-XXI nedjelja		18th-21st week	

Opterećenjestudenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:

2 sata predavanja
1 sata vježbanja
1 sat laboratorijskih vježbanja
2 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
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Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:

2 hours of lectures
1 hour for tutorial
1 hour for laboratory
2 hours and **40** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

Osnovna literatura / basic literature:

- Prof. dr Božidar Đ. Milić: "Elementi i konstrukcije zgrada", UCG Građevinski fakultet, Podgorica, 1999.
- Prof. dr Ranko Trbojević: "Arhitektonske konstrukcije - Masivni konstruktivni sklop", Beograd, 2003.
- Petar K. Krstić: "Arhitektonske konstrukcije" 1 i 2, Naučna knjiga, Beograd, 1984.

Dopunska literatura/ Additional literature:

- Martin Mittag: "Građevinske konstrukcije", Građevinska knjiga, Beograd, 2003.
- F. Čing, K. Adams: "Ilustrovani primjeri konstrukcija", Građevinska knjiga, Beograd, 2007.
- Đuro Peulić: "Konstruktivni elementi zgrada" I i II dio, Tehnička knjiga, Zagreb, 1980.

Oblici provjere znanja i ocjenjivanje:

- prisustvo na nastavi: 4 - 6 poena
- 5 semestralni grafički rad: 13 - 24 poena
- 2 kolokvijuma: 34 - 70 poena
- završni ispit : ≤ 50 poena
- **Prelazna ocjena: min. 51 poen**

Forms of Assessment:

- Presence in classes: 4 - 6 points
- 5 semester graphic work: 13-24 points
- 2 tests: 34 - 70 points
- Final exam: ≤ 50 points
- The passing grade: min. 51 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Arhitektonske konstrukcije II:
1. Poznaje konstruktivne sisteme i sposoban je da procijeni i odabere adekvatno konstruktivno konstuktivno i građevinsko 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.
3. Posjeduje adekvatno znanje o fizičkim osobinama i karakteristikama građevinskih materijala, komponenata i sistema, kao i uticajima izbora istih na životnu sredinu.

Expected learning outcomes:

It is expected that the student after passing the exam Architectural Structures II:
1. He knows the constructive systems and is able to evaluate and choose appropriate and constructive building a 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;
3. Has adequate knowledge of the physical properties and characteristics of building materials, components and systems, as well as the influence of the same choices on the environment.

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)

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKE KONSTRUKCIJE 3**
Course title:	**ARCHITECTURAL CONSTRUCTION 3**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
3.1.	**obavezan / required**	**III**	**5.0**	**2P+1V+1L**

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

Uslovljenost drugim predmetima:

Položeni ispiti iz: Arhitektonske konstrukcije I i II.

Prerequisites:

Passed exams: Architectural Structures I and II.

Ciljevi izučavanja predmeta:

Sticanje znanja o konstruktivnim sklopovima i elementima skeletnih zgrada u armiranom betonu i čeliku: prijem statičkog i dinamičkog opterećenja, stubovi i grede - principi povezivanja, međuspratne konstrukcije, vertikalne komunikacije i aseizmički AB zidovi, temelji, fasade – zidane ispune i zid zavjesa, pregradni zidovi.

Course aims:

Acquiring knowledge about structural components and elements of skeletal buildings in reinforced concrete and steel: the reception of static and dynamic loads, columns and beams - the principles of connectivity, floor structure, vertical communication and aseismic reinforced concrete walls, foundations, facades - masonry restoration and curtain wall, partition walls.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Prof. dr Dušan Vuksanović
	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

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	Uvod: O skeletnim zgradama, konstruktivni principi višespratnih skeletnih zgrada; Funkcionalni i konstruktivni aspekti administrativnih zgrada
II nedjelja	Funkcionalni sklop administrativnih zgrada: dimenzionisanje i konstrukcija; Vertikalne komunikacije - stepeništa i liftovi: AB jezgra
III nedjelja	AB skeletne zgrade: konstruktivni principi, sklopovi i elementi - veze stubova i podvlaka; AB vertikalni konstruktivni elementi: stubovi i aseizmički zidovi
IV nedjelja	Horizontalni konstruktivni elementi Armiranobetonske međuspratne konstrukcije i AB grede: rebraste i pločaste tavanice; temelji

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction: skeletal buildings, the structural principles of multi-story skeletal buildings, functional and structural aspects of administrative buildings
2nd week	Functional complex of administrative buildings: dimensioning and construction; Vertical Communications - stairs and elevators: reinforced concrete core
3rd week	Reinforced concrete skeleton of the building: structural principles, fixtures and fittings - connection of columns and girders; vertical reinforced concrete structural elements: columns and aseismic walls
4th week	Horizontal structural elements of reinforced-concrete floor structure and reinforced concrete beams: ribbed plate and the ceiling; foundations

	AB skeletnih zgrada
V nedjelja	Fasade skeletnih zgrada: zidane ispune/zid zavjesa – oblikovanje, materijalizacija
VI nedjelja	Materijalizacija karakterističnih elemenata - detalji
VII nedjelja	KOLOKVIJUM I - *Predaja elaborata A*
VIII nedjelja	Čelične skeletne zgrade: konstruktivni principi, sklopovi i elementi
IX nedjelja	Čelične međuspratne konstrukcije: sa valjanim profilima, spregnute, sa čel. limovima
X nedjelja	Fundiranje čeličnih stubova; zaštita čeličnih konstrukcija od požara
XI nedjelja	Fasade skeletnih zgrada: zid zavjesa – konstrukcija, oblikovanje, materijalizacija
XII nedjelja	KOLOKVIJUM II / Predaja elaborata B
XIII nedjelja	Završne konsultacije
XIV nedjelja	Predaja semestralnog rada
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

	of skeletal reinforced concrete buildings
5th week	Façade for skeletal buildings: masonry fill / curtain wall - design, materialization
6th week	The materialization of typical elements - details
7th week	1st TEST (colloquium) - A elaborate Submission
8th week	The steel skeletal buildings: structural principles, components and elements
9th week	The steel floor structure: the rolled profiles, coupled with steel plates
10th week	Foundation of steel columns, protection of steel structures against fire
11th week	Skeletal building's facade: curtain wall - construction, design, materialization
12th week	2nd TEST (colloquium) - B elaborate Submission
13th week	Final consultation
14th week	Submission of work during the semester
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:

2 sata predavanja
1 sata vježbanja
1 sat laboratorijskih vježbanja
2 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)= **13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:

2 hours of lectures
1 hour for tutorial
1 hour for laboratory
2 hours and **40** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

Literatura / Literature:

- Vladislav Ivković: "Višespratne skeletne zgrade – konstruktivni sklopovi i elementi",Arhitekton. fakultet u Beogradu, ICS, Beograd, 1974.
- Prof.dr Božidar Đ. Milić: "Elementi i konstrukcije zgrada", UCG Građevinski fakultet, Podgorica, 1999.
- Ernst Nojfert: "Arhitektonsko projektovanje", 34.prošireno izdanje, Građevinska knjiga, Beograd, 1996.
- Martin Mittag: "Građevinske konstrukcije", 18.potpuno prerađeno izdanje, Građevinska knjiga, Beograd, 2003.

Dopunska literatura/Additional literature:

- F. Hart, W. Henn, H. Sontag: "Atlas čeličnih konstrukcija - visokogradnja", Građevinska knjiga, Beograd, 1987.
- F. Čing, K. Adams: "Ilustrovani primjeri konstrukcija", Građevinska knjiga, Beograd, 2007.

Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave : 4-6 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka

- I i II kolokvijum : 34-70 poena
- Seminarski rad : 13-24 poena
- Završni ispit : ≤ 50 poena

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

- Ocjene: A (91-100); B (81-90); C (71-80); D (61-70); E (51-60); F (manje od 51 poen).

Forms of Assessment:

* Regular attendance of classes: 4-6 points (each one less cause failure point), maximum 3 absences

- 1st and 2nd test: 13-24 points
- Seminar work: 34-70 points
- Final exam: ≤ 50 points

** Passing grade is obtained if the student achieved at least 51 points.

- Rating: A (91-100) B (81-90) C (71-80) D (61-70) E (51-60), F (below 51 points).

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Arhitektonske konstrukcije III:

Expected learning outcomes:

It is expected that the student after passing the exam Architectural Structures III:

1. Poznaje konstruktivne sisteme i sposoban je da procijeni i odabere adekvatno konstruktivno konstuktivno i građevinsko 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.
3. Posjeduje adekvatno znanje o fizičkim osobinama i karakteristikama građevinskih materijala, komponenata i sistema, kao i uticajima izbora istih na životnu sredinu.

1. He knows the constructive systems and is able to evaluate and choose appropriate and constructive building a 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;
3. Has adequate knowledge of the physical properties and characteristics of building materials, components and systems, as well as the influence of the same choices on the environment.

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)

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ISTORIJA ARHITEKTURE 3 (novi vijek)**
Course title:	**HISTORY OF ARCHITECTURE 3 (new century)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
3.2.	**obavezan / required**	**III**	**2.0**	**2P+0V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Sistematizovano znanje o razvoju graditeljstva kroz proučavanje arhitektonskih formi i stilova.

Course aims:

Systematic knowledge about the development of architecture through the study of architectural forms and styles.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Prof. dr Ilija Lalošević
	/

Metode nastave i savladavanje gradiva:

Predavanja i konsultacije.

Teaching methods and learning activities:

Lectures and consultations.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Graditeljski koncepti, značenje prostora i oblika u renesansi
II nedjelja	Arhitektura rane renesanse - Bruneleski
III nedjelja	Teorijske postavke renesansne arhitekture – Leon Batista Alberti
IV nedjelja	Ideje Leonarda da Vinčija
V nedjelja	Zrela renesansa u Italiji- XVI vijek (Bramante, Rafaelo, ...)
VI nedjelja	Manirizam; Mikelandjelo Buonaroti; Renesansa sjeverne Italije
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Andrea Paladio
IX nedjelja	Renesansa u evropskim zemljama
X nedjelja	Barokna arhitektura; značenje i jezik
XI nedjelja	Djanlorenco Bernini
XII nedjelja	Frančesko Boromini

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Architectural concepts, the meaning of of space and form in the Renaissance.
2nd week	Early Renaissance Architecture – Brunelleschi.
3rd week	Theoretical thesis of Renaissance architecture - Leon Batista Alberti.
4th week	Ideas of Leonardo da Vinci.
5th week	Mature Age Renaissance in Italy - sixteenth century (Bramante, Raphael, ...)
6th week	Mannerism; Michelangelo Buonarroti; Renaissance Northern Italy
7th week	1st TEST (colloquium)
8th week	Andrea Palladio
9th week	The Renaissance in European countries
10th week	Baroque architecture; meaning and language
11th week	Gian Lorenzo Bernini
12th week	Francesco Borromini

XIII nedjelja	Barokna arhitektura u Evropi i regionu
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

13th week	Baroque architecture in Europe and the region
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

2.0 kredita x 40/30 = 3 sata i 6 minuta
Struktura: 2 sata predavanja
1 sat i **6** minuta samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (3 sata i 6 min) x 16 = **49 sati i 36 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (3 sata i 6 minuta) = **6 sati i 12 minuta**

Ukupno opterećenje za predmet 2.0x30 =**60 sati**

Dopunski rad: **4 sata i 12 minuta**
Struktura opterećenja: 49 sati i 36 min. (Nastava) + 6 sati i 12 min. (Priprema) +4 sata i 12 min. (Dopunski rad) = 60 sati

Student workload:

Weekly

2.0 credits x 40/30 = 3 hours and 6 minutes
Structure: 2 hours of lectures
1 hours and **6** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (3 hours and 6 min) x 16 = **49 hours and 36 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **6 hours and 12 minutes**
Total hours for the course: 62.0x30 = **60 hours**
Additional hours: 4 hours and 12 minutes
Structure of workload: 49 hours and 36 min (lectures) + 6 hours and 12 min (preparation) + 4 hours and 12 min (Additional hours) = 60 hours

Literatura / Literature:

- Nadja Kurtović Folić, Razvoj arhitekture i naselja, skripta;
- Bogdan Nestorović, Arhitektura novog veka, Naučna knjiga, Beograd 1964,
- Bruno Milić, Razvoj grada kroz stoljeća 3, Školska knjiga, Zagreb 2002.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Završni ispit : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Final exam: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Istorije arhitekture III:
1. Posjeduje znanje o kulturnoj i intelektualnoj istoriji, teoriji i tehnologijama koje su od značaja za arhitektonsko i urbanističko projektovanje;
2. Razumije uticaj istorije na prostorne, društvene i tehnološke aspekte arhitekture.

Expected learning outcomes:

It is expected that the student after passing the exam History of Architecture III - Modern Age:
1. Has knowledge of the cultural and intellectual history of modern times, the theory and technologies that are important for architectural and urban design;
2. Understands the influence of history on spatial, social and technological aspects of architecture.

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).

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).

Napomena:

Nastava se može odvijati na engleskom jeziku.Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Classes can be held in English.Further information about the subjec can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**OSNOVE URBANISTIČKOG PROJEKTOVANJE 1**
Course title:	**BASICS OF URBAN DESIGN 1**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
3.6.	**obavezan / required**	**III**	**6.0**	**2P+3V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Primarni zadatak nastave na ovom predmetu jeste upoznavanje sa osnovnim elementima izgrađenih prostora. Predmetom sekompleksno razmatraju ključna morfološka obeležja gradskih prostora kao i njihova međuzavisnost sa konteksom u kome se nalaze.

Course aims:

The primary task of teaching in this course is to introduce the basic elements of built environment. The subject is complex considered o key morphological characteristics collected of city space as well as their correlation with the context in which they are located.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Doc.dr Svetislav G. Popović
	AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

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	Osnovni elementi urbanih prostora
II nedjelja	Karta kao sredstvo iskazivanja stanja u prostoru
III nedjelja	Kuća i parcela - karakteristike izgrađenosti
IV nedjelja	Kuća i parcela - karakteristike funkcije
V nedjelja	Ulica - karakteristike izgrađenosti.
VI nedjelja	Ulica - karakteristike funkcije.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Gradski trg - karakteristike izgrađenosti
IX nedjelja	Gradski trg - karakteristike finkcije
X nedjelja	Gradski blok - karakteristike izgrađenosti i funkcije
XI nedjelja	Grad - fizička i funkcionalna dimenzija
XII nedjelja	Transformacija elemenata gradskog prostora
XIII nedjelja	Transformacija gradskih prostora
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	The basic elements of urban spaces
2nd week	Map as tool of expressing the situation in the space
3rd week	House and parcel - the characteristics of development
4th week	House and parcel - the characteristics of functions
5th week	Street - the characteristics of development.
6th week	Street - the characteristics of the function.
7th week	1st TEST (colloquium)
8th week	City Square - the characteristics of development
9th week	Town Square - the characteristics of the function
10th week	City block - the characteristics of development and function
11th week	City - physical and functional dimensions
12th week	The transformation of the elements of urban space
13th week	The transformation of urban spaces
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.

XVII nedjelja XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.

17th week 18th-21st week	Additional lessons and exam term.

Opterećenje studenata:

Nedjeljno

6.0 kredita x 40/30 = 8 sati
Struktura: 2 sata predavanja
3 sat računskih vježbi
3 sata samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (8 sati) x 16 = **128 sati**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (8 sati) = **16 sati**
Ukupno opterećenje za predmet: 6.0x30 = **180 sati**
Dopunski rad: **36 sati**
Struktura opterećenja: 128 sati (Nastava) + 16 sati (Priprema) + 36 sati (Dopunski rad) = 180 sati

Student workload:

Weekly

6.0 credits x 40/30 = 8 hours
Structure: 2 hours of lectures
3 hour for tutorial
3 hours of individual work, including consultations

During the semester

Teaching and the final exam: (8 hours) x 16 = **128 hours**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **16 hours**
Total hours for the course: 6.0x30 = **180 hours**
Additional hours: 36 hours
Structure of workload: 128 hours (lectures)+ 16 hours (preparation) + 36 hours (Additional hours) = 180 hours

Literatura / Literature:

- B.Mirković : Osnove urbanizma 1A, 1B, 2A i 2B.;Građevinska knjiga Beograd 1967.
- V.Đokić: Urbana morfologija :Grad i gradski trg, AF Beograd 2004 .
- D.Reba: Ulica elementi strukture i identiteta, Orion, N.Sad 2010.
- Zhou, Jinomin: Urban Housing Forms, Amsterdam 2005.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Osnove urbanističkog projektovanja 1:
1. Posjeduje znanje iz teorija urbanističkog projektovanja i planiranja naselja;
2. Ima sposobnost da identifikuje i vrednuje osnovne elemente urbanog prostora i njihove odnose u konkretnom kontekstu;
3. Razumije potrebe i zahtjeve korisnika prostora i lokalne sredine u procesu urbanih transformacija;
4. Ima sposobnost da ransformiše osnovne elemente urbanog prostora u skladu sa načelima održivog razvoja, kao i da predstavi svoj rad na adekvatan način.

Expected learning outcomes:

It is expected that the student after passing the exam Basis of urban planning:
1. To identify the basic elements of urban space and their relationships in the present context To apply research methods and techniques for the development of projects of different types and purposes;
2. To evaluate the basic elements of urban space in a particular context;
3. To recognize the needs and demands of space users and local communities in the process of urban transformation;
4. To convert the basic elements of urban space in accordance with the principles of sustainable development, to adequately performance results

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).

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)

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKA FIZIKA**
Course title:	**BUILDING PHYSICS**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
4.1.	**obavezan / required**	**IV**	**4.0**	**2P+1V+1L**

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

Uslovljenost drugim predmetima:

Položeni ispiti iz: Arhitektonske konstrukcije I, II i III.

Prerequisites:

Passed exams: Architectural Structures I, II and III.

Ciljevi izučavanja predmeta:

Analiza osnovnih parametara fizike zgrada: toplotna zaštita, zvučna zaštita i dnevni osvjetljaj. Oblasti izučavanja: elementi klimatologije; koncept, principi projektovanja i osnovi proračuna toplotne i zvučne izolacije; koncept, principi primjene i vrednovanja dnevnog osvjetljaja. Evropska i nacionalna regulativa: direktive, standardi, pravilnici.

Course aims:

Analysis of the basic parameters of building physics: thermal protection, heat protection and daily illumination. The field of study: climatology elements; concepts, design principles and the basis of calculation of thermal and sound insulation; concepts, principles, implementation and evaluation of daily illumination. European and national legislation: Directives, Standards, Regulations.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Prof. dr Dušan Vuksanović
	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

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	Ishodišta i razvoj arh. fizike: zahtjevi klime unutrašnjeg prostora, energetski aspekti komfora, klimatologija
II nedjelja	Toplotna zaštita: toplotni komfor, kontrola toplotnih gubitaka i dobitaka u zgradi, principi i domen primjene: omotač zgrade
III nedjelja	Analiza toplotne zaštite elemenata omotača: karakteristični parametri, pravilnici i standardi
IV nedjelja	Toplotna zaštita - toplotna izolacija: proračun koeficijenta prolaza toplote "k (U)", toplotni mostovi
V nedjelja	Toplot. zaštita - difuzija vodene pare: proračun pritisaka vodene pare, dijagram difuzije, problemi kondenzacije
VI nedjelja	Toplotna zaštita - proračun faktora toplotne stabilnosti za ljetnje razdoblje
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Zvučna zaštita i akustika: zvučni komfor, analiza zvučne zaštite elemenata omotača: karakteristični parametri, pravilnici i standardi

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	The origin and Development of Arch. physics: the requirements of the interior climate, energy aspects of comfort, climatology
2nd week	Thermal protection: thermal comfort, control of the heat loss and gain in the building, principles and application domain: the building envelope
3rd week	Analysis of the thermal protection elements for envelope: characteristic parameters, Regulations and Standards
4th week	Thermal protection - thermal insulation: calculation of heat transfer coefficient "k (U)," thermal bridges
5th week	Heat. Protection - water vapor diffusion: the budget pressures of water vapor, the diagram of diffusion, condensation problems
6th week	Thermal protection - calculation of thermal stability factor for the summer period
7th week	1st TEST (colloquium)
8th week	Acoustic insulation and acoustics: acoustic comfort, analysis of acoustic insulation for envelope elements: characteristic parameters, rules and standards

IX nedjelja	Zvučna zaštita - proračun zvučne izolacije za vazdušni zvuk i zvuk udara, principi materijalizacije
X nedjelja	Osvjetljenje u arhitekturi - dnevni osvjetljaj i vještačko osvjetljenje: svjetlosni komfor, pojmovi i parametri, metode proračuna
XI nedjelja	Arhitektonski aspekti kvaliteta dnevnog osvjetljaja, vještačko osvjetljenje: principi, kriterijumi i parametri
XII nedjelja	Zvučna zaštita i akustika: zvučni komfor, analiza zvučne zaštite elemenata omotača: karakteristični parametri, pravilnici i standardi
XIII nedjelja	Zvučna zaštita - proračun zvučne izolacije za vazdušni zvuk i zvuk udara, principi materijalizacije
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

9th week	Acoustic insulation - calculation of sound insulation for air and impact sound, principles of materialization
10th week	Lighting in Architecture - daily illumination and artificial lighting: lighting comfort, terms and parameters, calculation methods
11th week	Architectural aspects of the quality of daily illumination, artificial lighting: the principles, criteria and parameters
12th week	Acoustic insulation and acoustics: acoustic comfort, the analysis of sound insulation envelope elements: characteristic parameters, Regulations and Standards
13th week	Acoustic insulation - calculation of sound insulation for air and impact sound, principles of materialization
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

4.0 kredita x 40/30 = 5 sati i 33 minuta

Struktura: 2 sata predavanja
1 sat računskih vježbi
1 sat laboratorijskih vježbanja
1 sat i **33** minuta samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (5 sati i 33 min) x 16 = **88 sati i 48 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (5 sati i 33 minuta) = **11 sati i 6 minuta**

Ukupno opterećenje za predmet 4.0x30 =**120 sati**

Dopunski rad: **20 sati i 6 minuta**
Struktura opterećenja: 88 sati i 48 min. (Nastava) + 11 sati i 6 min. (Priprema) +20 sati i 6 min. (Dopunski rad) = 120 sati

Student workload:

Weekly

4.0 credits x 40/30 = 5 hours and 33 minutes
Structure: 2 hours of lectures
1 hours of tutoria
1hour of laboratory
1 hours and **33** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **88 hours and 48 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 48min) = **11 hours and 6 minutes**
Total hours for the course: 4.0x30 = **120 hours**
Additional hours: 20 hours and 6 minutes
Structure of workload: 88 hours and 48 min (lectures) + 11 hours and 6 min (preparation) + 20 hours and 6 min (Additional hours) = 120 hours

Literatura / Literature:

- Popović-Jovanović M.: "Zdravo stanovanje", Arhitektonika, Arhitektonski fakultet Univerziteta u Beogradu, Beograd, 1991.
- Standardi za oblast Toplotna tehnika u građevinarstvu: JUS U.J5.: 600, 510, 520, 530
- Pucar M., Pajević M., Jovanović Popović M.: "Bioklimatsko planiranje i projektovanje – urbanistički parametri", Zavet, Beograd, 1994.
- Zbašnik Senegačnik M.: "Pasivna kuća", SUN ARH doo, Zagreb, 2009.
- Neufert E.: "Arhitektonsko projektovanje", Građevinska knjiga, Beograd, 1996.

Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 15 poena
- II kolokvijum : maksimum 15 poena
- 4 x Seminarski rad : maksimum 40 poena
- Završni ispit : maksimum 20 poena

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

- Ocjene: A (91-100); B (81-90); C (71-80); D (61-70); E (51-60); F (manje od 51 poen).

Forms of Assessment:

* Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 15 points
- Second test: maximum 15 points
- 4 X Seminar work: maximum 40 points
- Final exam: maximum 20 points

** Passing grade is obtained if the student achieved at least 51 points.

- Rating: A (91-100) B (81-90) C (71-80) D (61-70) E (51-60), F (below 51 points).

Očekivani ishodi učenja:

Očekuje se dastudent, nakon položenog Arhitektonska fizika:
1. Poznaje i koristi principe projektovanja optimalnih vizuelnih, termalnih i akustičnih ambijenata, a prema principima održivog razvoja.;
2. Ima sposobnost da sintezno koristi znanje iz konstruktivne i

Expected learning outcomes:

It is expected that the student after passing the architectural physics:
1. Knows and uses the principles of designing optimal visual, thermal and acoustic environments, and according to the principles of sustainable development;

građevinske tematike, kao i poznavanje aktuelnih tehnologija, u procesu projektovanja; 3. Posjeduje adekvatno znanje o fizičkim osobinama i karakteristikama građevinskih materijala, komponenata i sistema, kao i uticajima izbora istih na životnu sredinu.	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; 3.Has adequate knowledge of the physical properties and characteristics of building materials, components and systems, as well as the influence of the same choices on the environment.

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:	**Methods for assessing the quality and ensuring preferred learning outcomes:**
Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).

Napomena:	**Admonishment:**
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.	Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**SAVREMENA ARHITEKTURA**
Course title:	**CONTEMPORARY ARCHITECTURE**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
4.2.	**obavezan / required**	**IV**	**2.0**	**2P+0V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Sticanje osnovnih znanja iz oblasti istorije arhitekture od kraja XVIII do kraja XX vijeka, sa akcentom na modernim pokretima u XX vijeku. Studenti se upoznaju sa tendencijama u arhitekturi od korijena pojave modernizma tj. od pojave klasicizma, racionalizma, akademizma, „inženjerske arhitekture“, zatim preko avangardnih i modernih pokreta u XX vijeku, pa do savremenih arhitektonskih koncepata sa kraja XX i početka XXI vijeka, i to kroz značajne autore, njihove ideje, koncepte i realizacije.

Course aims:

Acquisition of fundamental knowledge in the field of architectural history from the late eighteenth to the late twentieth century, with ar emphasis on modern movements in the twentieth century. Students learn about the tendencies in the architecture from the roots of modernism that appear. occurrence of classicism, rationalism, academicism, "Engineering Architecture", across the avant-garde and modern movements in the twentieth century, to the modern architectural concepts in the late twentieth and early twenty-first century, and the significant authors, their ideas, concepts and implementation.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Doc. dr Slavica Stamatović Vučković
	/

Metode nastave i savladavanje gradiva:

Predavanja svakog poglavlja sa projekcijama, obavezne konsultacije, učenje, kolokvijumi i završni ispit (semestralni rad).

Teaching methods and learning activities:

The lectures of each chapter with projections, mandatory consultation, teaching, colloquiums and final exam (semester work)

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Preduslovi za razvoj moderne - XVIII i XIX vijek (Piranezi, Blondel, Ledoux, Boullee, Diran i dr.)
II nedjelja	Industrijska revolucija - novi materijali i konstrukcije (Paxton, Eiffel, Garnijer, Pere i dr.)
III nedjelja	Čikaška škola (Sullivan, Wright), Secesija (Gaudi i dr.), Art Nouveau (Engleska, Francuska i dr.)
IV nedjelja	Avangardni pravci XX vijeka (Ekspresionizam, Futurizam, De Stijl, Novi objektivizam)
V nedjelja	Avangardni pravci XX vijeka (Suprematizam, Zenitizam, Proun, Ruski konstruktivizam)
VI nedjelja	Adolf Loos, Njemački Werkbund, Bauhaus

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Prerequisites for the development of the modern - the eighteenth and nineteenth century (Piranesi, Blondel, Ledoux, Boullee, Diran, etc.)
2nd week	The Industrial Revolution - new materials and structures (Paxton, Eiffel, Garnier, Pere etc..)
3rd week	The Chicago School (Sullivan, Wright), Secession (Gaudi etc.), Art Nouveau (England, France, etc.).
4th week	The avant-garde trends of the twentieth century (Expressionism, Futurism, De Stijl, New Objectivism)
5th week	The avant-garde trends of the twentieth century (Suprematism, Zenitizam, Proun, Russian Constructivism)
6th week	Adolf Loos, German Werkbund, Bauhaus (Walter

	(Walter Gropius)
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Le Corbusier (L'Esprit Nouveau, Ville Radieuse i dr.)
IX nedjelja	Mies van der Rohe, Internacionalni stil, Italijanski racionalizam (Teragni)
X nedjelja	Frank Lloyd Wright, Alvar Alto
XI nedjelja	Brutalizam, CIAM, Grupa X, Fuler, Džonson, Kan, metabolizam, strukturalizam itd.
XII nedjelja	High Tech, Postmodernizam, Dekonstruktivizam, Kritički regionalizam, savremeni arh. koncepti
XIII nedjelja	Pregled arhitekture na teritoriji bivše SFRJ i Crne Gore u XX vijeku
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

	Gropius)
7th week	1st TEST (colloquium)
8th week	Le Corbusier (L'Esprit Nouveau, Ville Radieuse, etc.).
9th week	Mies van der Rohe, International style, Italian Rationalism (Teragni)
10th week	Frank Lloyd Wright, Alvar Alto
11th week	Brutalism, CIAM, Group X, Fuller, Johnson, Khan, metabolism, structuralism, etc.
12th week	High Tech, Postmodernism, Deconstructivism, critical regionalism, contemporary architect. concepts
13th week	Architecture Overview in the former Yugoslavia and Montenegro in the twentieth century
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

2.0 kredita x 40/30 = 3 sata i 6 minuta
Struktura: 2 sata predavanja
1 sat i **6** minuta samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (3 sata i 6 min) x 16 = **49 sati i 36 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (3 sata i 6 minuta) = **6 sati i 12 minuta**

Ukupno opterećenje za predmet 2.0x30 =**60 sati**

Dopunski rad: **4 sata i 12 minuta**
Struktura opterećenja: 49 sati i 36 min. (Nastava) + 6 sati i 12 min. (Priprema) +4 sata i 12 min. (Dopunski rad) = 60 sati

Student workload:

Weekly

2.0 credits x 40/30 = 3 hours and 6 minutes
Structure: 2 hours of lectures
1 hours and **6** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (3 hours and 6 min) x 16 = **49 hours and 36 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **6 hours and 12 minutes**
Total hours for the course: 62.0x30 = **60 hours**
Additional hours: 4 hours and 12 minutes
Structure of workload: 49 hours and 36 min (lectures) + 6 hours and 12 min (preparation) + 4 hours and 12 min (Additional hours) = 60 hours

Literatura / Literature:

- Kenet Frempton. Moderna arhitektura, kritička istorija. Beograd: Orion Art, 2004.
- Sigfrid Gidion. Prostor, vreme, arhitektura. Beograd: Gradjevinska knjiga, 2002.
- Hays, Michael K. (ed.) Architecture Theory since 1968. Cambridge, Mass.: The MIT Press, 1998.
- Dženks Čarls. Moderni pokreti u arhitekturi. Beograd: Gradjevinska knjiga, 1988.
- Dobrović Nikola. Savremena arhitektura 1-5. Beograd: Arhitektonski fakultet, 1963-71.
- Kloc, Hajnrih. Umetnost u XX veku: Moderna - Postmoderna - Druga moderna. Novi Sad: Svetovi, 1995.
- Štraus, Ivan. Arhitektura Jugoslavije: 1945 - 1990, Sarajevo: Svjetlost, 1991.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen seminarski rad.

** Semestralni rad: Student bira temu koju mu nastavnik odobrava i piše rad (min. 3000, max. 5000 riječi) sa ilustracijama i bibliografijom (stampa, A4 format, predaje se na kraju semestra). Izrada kratkog eseja (do 500 rijeci) nije obavezna.

- Uredno pohađanje nastave: ukupno 5 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : max 20 poena / min 11 p.
- II kolokvijum : max 20 poena / min 11 p.
- Kratki esej na zadatu temu (izmedju kolokvijuma) : max 5 poena
- Završni ispit : max 50 poena / min 26 p.

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

Forms of Assessment:

* Student has to pass both tests and positively evaluated seminar thesis.

** Semester work: Student selects a topic that his teacher approve and writing a paper (minimum 3000 max. 5000 words), with illustrations and bibliography (printed, A4 format, shall be submitted at the end of the semester). Making a short essay (up to 500 words) is not required.

- Regular attendance of classes: 5 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points / min 11 p.
- Second test: maximum 20 points / min 11 p.
- A short essay on a given topic (between colloquiums): maximum 5 points
- Final exam: maximum 50 points / min 26 p.

** Passing grade is obtained if the student achieved at least 51 points.

Očekivani ishodi učenja:

Očekuje se dastudent, nakon položenog ispita Savremena arhitektura:
1. Posjeduje znanje o kulturnoj i intelektualnoj istoriji, teoriji i tehnologijama koje su od značaja za arhitektonsko i urbanističko projektovanje;
2. Razumije i objašnjava uticaj istorije i teorije na prostorne, društvene i tehnološke aspekte arhitekture;
3. Posjeduje sposobnost konceptualnog i kritičkog pristupa prema arhitektonskim i urbanističkim fenomenima;
4. Primjenjuje adekvatno poznavanje teorijskih koncepata u procesu projektovanja;
5. Razumije arhitektonsku profesiju i ulogu arhitekte u društveno-ekonomskim procesima.

Expected learning outcomes:

It is expected that the student after having passed the History of Architecture IV - Modern:
1. Has knowledge of the cultural and intellectual history, theory and technologies that are important for architectural and urban design;
2. Understands and explains the impact of history and theory of spatial, social and technological aspects of architecture;
3. Has the ability of conceptual and critical approach to architectura and urban phenomena;
4. Applies adequate knowledge of the theoretical concepts in the design process;
5. Understands the architectural profession and the role of architect in the socio-economic processes.

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).

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).

Napomena:

Predavanja se izvode za oba studija zajedno. Ukoliko nije položen jedan ili oba kolokvijuma nastavnik može dati mogućnost za održavanje popravnih kolokvijuma, pismenim ili usmenim putem. Za izradu semestralnih radova, u zavisnosti od teme, studenti dobijaju dodatnu literaturu..

Admonishment:

Lectures are conducted for both studies together. If it is not passed one or both colloquiums the teacher may give the opportunity for correctional maintenance of the colloquium, in writing or orally. To create a semester of work, depending on the topic, students will be granted to the additional reading.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**OSNOVE URBANISTIČKOG PROJEKTOVANJE 2**
Course title:	**BASICS OF URBAN DESIGN 2**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
4.6.	**obavezan / required**	**IV**	**6.0**	**2P+3V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Zadatak nastave na ovom predmetu jeste upoznavanje sa osnovnim funkcionalnim elementima izgrađenih prostora, kao i njihova relacija sa kontekstom u kome se nalaze. Funkcionalna struktura grada posmatra se u kontekstualnim uslovima izgrađenog gradskog prostora. Predmetom se naročito izučava prostorni raspored funkcija. Njihova među zavisnost kao principi njihove transformacije u istorijskom kontinuitetu.

Course aims:

The task of teaching in this course is to introduce students to the basic functional elements of built environments, as well as their relation to the context in which they are located. The functional structure of the city is seen in the contextual conditions of the built urban space. The subject is particularly studied the spatial distribution function. Their dependence on such principles among their transformation into a historical continuum.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc.dr Svetislav G. Popović

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

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	Funkcionalna struktura grada
II nedjelja	Prostorna struktura grada
III nedjelja	Socijalna struktura grada
IV nedjelja	Građevinsko zemljište - tržište i korišćenje
V nedjelja	Gradsko stanovanje-zahtjevi, razmještaj i fizičke strukture
VI nedjelja	Gradski centri, proizvodne zone i strukture
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Urbana rekreacija-vrste i prostori
IX nedjelja	Saobraćaj, saobraćajna mreža i infrastruktura
X nedjelja	Ekološki uslovi urbane sredine
XI nedjelja	Javni i privatni prostori
XII nedjelja	Kulturno istorijski aspekti i kontekstualni uslovi urbanog razvoja
XIII nedjelja	Urbanističko planiranje i projektovanje-uloga stručnih disciplina u urbanim transformacijama
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	The functional structure of the city
2nd week	The spatial structure of the city
3rd week	The social structure of the city
4th week	Building land - market and use
5th week	City housing - requirements, deployment and physical structure
6th week	City centers, production areas and structures
7th week	1st TEST (colloquium)
8th week	Urban recreation - types and spaces
9th week	Traffic, transportation networks and infrastructure
10th week	Ecological conditions the urban environment
11th week	Public and private spaces
12th week	Cultural and historical aspects and contextual conditions of urban development
13th week	Urban planning and design, role of the profess. disciplines in the urban transformation
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.

XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno
6.0 kredita x 40/30 = 8 sati
Struktura: 2 sata predavanja
3 sat računskih vježbi
3 sata samostalnog rada, uključujući konsultacije

U toku semestra
Nastava i završni ispit: (8 sati) x 16 = **128 sati**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (8 sati) = **16 sati**
Ukupno opterećenje za predmet: 6.0x30 = **180 sati**
Dopunski rad: **36 sati**
Struktura opterećenja: 128 sati (Nastava) + 16 sati (Priprema) + 36 sati (Dopunski rad) = 180 sati

Student workload:

Weekly
6.0 credits x 40/30 = 8 hours
Structure: 2 hours of lectures
3 hour for tutorial
3 hours of individual work, including consultations

During the semester
Teaching and the final exam: (8 hours) x 16 = **128 hours**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **16 hours**
Total hours for the course: 6.0x30 = **180 hours**
Additional hours: 36 hours
Structure of workload: 128 hours (lectures)+ 16 hours (preparation) + 36 hours (Additional hours) = 180 hours

Literatura / Literature:

- Korica,Rajko: **Infrastruktura, saobraćaj, urbanizam, arhitektura**.AF, Beograd 2008
- Krier, Rob: **Gradski prostor u teoriji i praksi**.GK Beograd 2007.
- Maletin, Mihailo: **Planiranje i projektovanje saobraćajnica u gradovima**, Orion art, Beograd 2007.
- Maksimović, Branko: **Urbanizam ,** GK Beograd 1957.
- Tošković, Dobrivoje: **Prostorno i urbanističko planiranje**, Akademska misao,Beograd 2006.
- Maretić, Mirko: **Gradski Centri**, ŠK Zagreb, 1996.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Osnove urbanističkog projektovanja 2:
1. Posjeduje adekvatno znanje iz urbanističkog projektovanja, metoda i vještina neophodnih u planskom procesu i sposobnost učestvovanja u izradi prostorno-planske dokumentacije;
2. Ima sposobnost da objasni principe, mehanizme, modele urbanističkog projektovanja u kontekstu organizacije osnovnih urbanih funkcija;
3. Ima sposobnost da kritički ocijeni principe urbanističkog projektovanja, kroz vrijeme, a u skladu sa principima održivog razvoja;
4. Posjeduje sposobnost da integriše osnovne elemente urbanog prostora u procesu urbanih transformacija;
5. Prepoznaje potrebe i zahtjeve korisnika prostora i lokalne sredine.

Expected learning outcomes:

It is expected that the student after passing the exam Basics of urban design 2:
1. Has adequate knowledge of urban design, methods and skills necessary in the planning process and the ability to participate in development of spatial planning documents;
2. Has the ability to explain the principles, mechanisms, models of urban design in the context of the organization of basic urban functions;
3. Has the ability to critically evaluate the principles of urban design through time, and in accordance with the principles of sustainable development;
4. Has the ability to integrate the basic elements of urban space in the process of urban transformation;
5. Recognizes the needs and demands of space users and local communities.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKO PROJEKTOVANJE 3 (privredni i poslovni objekti)**
Course title:	**ARCHITECTURAL DESIGN 3 (industrial and business buildings)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
5.4.	**obavezan / required**	**V**	**9.0**	**3P+4V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa najznačajnijim prostorno – funkcionalnim i oblikovnim karakteristikama, kao i metodama u organizaciji i projektovanju privrednih objekata koji čine: industrijski objekti, poljoprivredni objekti, trgovački objekti.

Course aims:

Students are introduced to most important of spatial - functional and formal characteristics, and methods of organization and design of commercial buildings that are: industrial buildings, agricultural buildings, commercial buildings.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Prof.dr Goran Radović

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, konsultacije, studijske stručne ekskurzije i studentske radionice. Na predavanjima studenti se upoznaju sa privrednim objektima i njihovim značajem za privredni razvoj, vrstama i tipologijom privrednih objekata kao i prostorno – funkcionalnim karakteristikama organizacije prostora privrednih objekata. Na vježbama u toku semestra studenti izrađuju jedan idejni projekat nekog privrednog objekta.Na studentskim ekskurzijama studenti, u pratnji profesora i saradnika, obilaze karakteristične primjere privrednih objekata u okruženju, uz stručna objašnjenja i komentare na licu mjesta. Na studentskim radionicama studenti u grupama, sa studentima drugih fakulteta arhitekture, analiziraju i rješavaju probleme privrednih objekata na konkretnim lokacijama, zajedno sa profesorima i saradnicima, matičnog i drugih fakulteta.

Teaching methods and learning activities:

Lectures, exercises, consultations, study tours and professional student workshops. During lectures students are introduced to economy buildings and their importance to economic development, types and typology of industrial buildings, as well as spatial - functional characteristics of commercial buildings. During practical classes in the course of semester, students prepare a preliminary design of a commercial building. On student excursions the students, accompanied by teachers and staff, visiting typical examples of commercial properties in the area, with expert explanations and comments on the site. At the students workshops students in groups with students from other faculties of architecture, analyze and solve business facilities at particular locations, together with professors and colleagues, hosting and the other faculties.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.

I nedjelja	P: Kratak pregled razvoja i značaja privrede. V: Upoznavanje sa projektnim zadatkom	1st week	C: A short review of the development and the importance of the economy. T: Introduction to the project task
II nedjelja	P: Osnovne vrste i tipovi privrednih objekatai njihove lokacije. V: Analiza lokacije	2nd week	C: The basic types and the types of commercial buildings and their location. T: Site analysis
III nedjelja	P: Industrijski objekati. V: Analize ideja na lokaciji.	3rd week	C: industrial facility. T: Analyses of ideas on the site.
IV nedjelja	P: Industrijski objekti. V: Razrada ideje u odnosu na lokaciju.	4th week	C: Industrial buildings. T: Development of ideas in relation to the location.
V nedjelja	P: Industrijski objekti. V: Razrada forme.	5th week	C: Industrial buildings. T: Development of form.
VI nedjelja	P: Industrijski objekti. V: Razrada forme i funkcije.	6th week	C: Industrial buildings. T: Development of form and function.
VII nedjelja	KOLOKVIJUM I	7th week	C: Agricultural buildings. T: Development functions.
VIII nedjelja	P: Poljoprivredni objekti. V: Razrada funkcije.	8th week	C: Agricultural buildings. T: Development functions.
IX nedjelja	P: Poljoprivredni objekti. V: Razrada funkcije.	9th week	C: Agricultural buildings. T: Development of the project.
X nedjelja	P: Poljoprivredni objekti. V: Razrada projekta.	10th week	C. Shopping facilities. T: Development of the project.
XI nedjelja	P. Trgovački objekti. V: Razrada projekta.	11th week	C: Shopping facilities. T: Development of the project.
XII nedjelja	P: Trgovački objekti. V: Razrada projekta.	12th week	C: V Shopping facilities T: Development project.
XIII nedjelja	P: Trgovački objekti V: Razrada projekta.	13th week	C: Agricultural buildings. T: Development functions.
XIV nedjelja	KOLOKVIJUM II	14th week	2nd TEST (colloquium)
XV nedjelja	Završni ispit.	15th week	FINAL EXAM.
XVI nedjelja	Ovjera semestra i upis ocjena.	16th week	Verification of the semester and mark enrollment.
XVII nedjelja ** Predavanja (P); Vježbe (V).	Dopunska nastava i popravni ispitni rok.	17th week ** Courses (C), Tutorial (T)	Additional lessons and exam term.
XVIII-XXI nedjelja		18th-21st week	

Opterećenje studenata:

Nedjeljno

9.0 kredita x 40/30 = 12 sati
Struktura: 3 sata predavanja
4 sata računskih vježbi
5 sato samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

Ukupno opterećenje za predmet: 9.0x30 = **270 sati**
Dopunski rad: **54 sata**
Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

Student workload:

Weekly

9.0 credits x 40/30 = 12 hours
Structure: 3 hours of lectures
4 hour for tutorial
5 hours of individual work, including consultations

During the semester

Teaching and the final exam: (12 hours) x 16 = **192 hours Necessary preparations** before the start of the semester (administration, registration, certification) 2 x (12 hours) = **24 hours**
Total hours for the course: 9.0x30 = **270 hours**
Additional hours: 54 hours
Structure of workload: 192 h (lectures)+ 24 h (preparation) + 54 h (add. hours) = 270 h

Literatura / Literature:

Industriski objekti / Industrial buildings:
- Vojislav Damjanović, Industrijski kompleksi i zgrade, Građevinska knjiga, Beograd, 1980.
- Walter Henn, *Internationale Beispiele,* Verlog Georg D.W. Callwey, Munchen, 1962.
- Adam Jürgen, Katharina Hausmann, Frank Jüttner, *Industrial buildings,* Basel, Berlin, Boston, Birkhäuser, 2004.

Poljoprivredni objekti / Agricultural buildings:
- Đorđe Simonović, Poljoprivredne zgrade i kompleksi, Građevinska knjiga, Beograd, 1989.
- Edited David Littlefield, *Metrik Handbook – Planning and Design Data,* Architectural Press – Elsevier, 1968 – 2008.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points

- Semestralni rad	: maksimum 50 poena

- Semester work:	maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Arhitektonsko projektovanje 3:
1. Ima sposobnost da izradi i predstavi projekte objekata odgovarajuće tipologije – privredni i poslovni objekti, različite razmjere i složenosti;
2. Posjeduje znanje o kontekstualnosti, tj uklapanju objekta u postojeći lokalni, socijalni i fizički, kontekst.
3. Posjeduje adekvatno znanje potrebno za kritičku valorizaciju arhitektonskih projekata odgovarajuće tipologije, sa estetskog, tehničkog aspekta i aspekta potreba korisnika;
4. Poznaje istorijski razvoj odgovarajuće tipologije arhitektonskih objekata, pripadajuće teorijske koncepte, kao i savremene tendencije.

Expected learning outcomes:

It is expected that the student after passing the exam Industrial facilities:
1. Has appropriate theoretical knowledge necessary in the preparation and presentation of projects of objects corresponding typology - economic and commercial buildings, different proportions and complexity;
2. Has knowledge of contexts, ie integration of the facility into the existing local, social and physical, context.
3. Has adequate knowledge needed for critical evaluation of architectural projects appropriate typologies, from the aesthetic, technical aspects and aspects of user needs;
4. Knows the historical development of the corresponding typology of architectural objects, corresponding theoretical concepts, as well as modern tendencies.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**KONSTRUKTIVNI SISTEMI II (čelične i drvene konstrukcije)**
Course title:	**STRUCTURAL SYSTEMS II (steel and wooden structures)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
5.5.	**obavezan / required**	**V**	**4.0**	**2P+1V+1L**

Studijski program:	ARHITEKTURA. Akademske studije Dužina trajanja: 10 semestara i 300 kredita.
Study programme:	ARCHITECTURE. Academic studies with integrated Master's degree. Duration: 10 semesters and 300 credits.

Uslovljenost drugim predmetima:

Nema uslovljenost.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Sticanje osnovnog znanja iz projektovanja čeličnih i drvenih konstrukcija.

Course aims:

The acquisition of basic knowledge regarding the design of steel and timber structures.

Predmetni nastavnik – saradnici u nastavi / Lecturer / Teacher – teaching assistants	GF _ 1 nastavnik
	GF _ 1 saradnika u nastavi

Metode nastave i savladavanje gradiva:

Predavanja, vježbe i konsultacije.

Teaching methods and learning activities:

Lectures, tutorials and consultations.

SADRŽAJ PREDMETA:

Pripremna nedjelja	*Priprema i upis semestra.*
I nedjelja	Uvod - Opšte o metalnim konstrukcijama, oblasti primjene, istorijski razvoj, prednosti i nedostaci. Čelik - svojstva, proizvodnja, proizvodi, obilježavanje.
II nedjelja	Dimenzionisanje čeličnih elemenata u konstrukcijama - uvod. Dimenzionisanje aksijalno zategnutog štapa. Dimenzionisanje aksijalno pritisnutog štapa. I zadatak semestarskog rada.
III nedjelja	Dimenzionisanje presjeka izloženih sili zatezanja i proizvoljnom dejstvu ostalih presječnih sila. Bočno-torziono izvijanje, izbočavanje limova - opšti pojmovi. I zadatak semestarskog rada.
IV nedjelja	Veze. Sredstva za vezu. Mehanička spojna sredstva - zakivci, zavrtnji, čepovi, klinovi. Zavarivanje. Proračun i konstruisanje veza.
V nedjelja	Elementi, projektovanje i građenje čeličnih konstrukcija zgrada. II zadatak semestarskog

SUBJECT CONTENT:

Preliminary week	Preparation and semester enrollment.
1st week	Introduction - General Information on metal structures, areas of application, historical development, advantages and disadvantages. Steel - features, production, products, labeling.
2nd week	Dimensioning of steel elements in structures - an introduction. Dimensioning of axially tightened rod. Dimensioning of axially pressed rod. First assignment of the semester.
3rd week	Dimensioning of sections exposed to tension force and to arbitrary effect of other cross section forces. Lateral-torsional buckling, buckling of plates - general terms. First assignment of the semester.
4th week	Connections. Means of communication. Mechanical fasteners - rivets, screws, plugs, pins. Welding.
5th week	Elements, designing and construction of steel structures of buildings. Second assignment of

	rada.
VI nedjelja	Elementi, projektovanje i građenje čeličnih konstrukcija mostova. II zadatak semestarskog rada.
VII nedjelja	
VIII nedjelja	*KOLOKVIJUM I*
IX nedjelja	Uvod - Opšte o drvenim konstrukcijama, oblasti primjene, istorijski razvoj, prednosti i nedostaci. Drvo - građa, vrste, greške, zaštita, drvo i požar, lamelirano lijepljeno drvo, svojstva.
X nedjelja	Osnove proračuna drvenih konstrukcija - nosivost, stabilnost i upotrebljivost.
XI nedjelja	Klasične krovne konstrukcije.
XII nedjelja	Lamelirane lijepljene drvene konstrukcije. III zadatak semestarskog rada.
XIII nedjelja	Spojna sredstva, veze i nastavci drvenih konstrukcija.
XIV nedjelja	Projektovanje i građenje drvenih konstrukcija. IV zadatak semestarskog rada.
XV nedjelja	*KOLOKVIJUM II*
XVI nedjelja	*Završni ispit.*
XVII nedjelja	Ovjera semestra i upis ocjena.
XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.

	the semester.
6th week	Elements, designing and construction of steel bridge structures. Second assignment of the semester.
7thweek	FREE WEEK.
8thweek	1st TEST (colloquium)
9th week	Introduction – General information on wooden structures, area of application, historical development, advantages and disadvantages. Timber – structure, types, mistakes, protection, fire and wood, glued laminated wood, properties.
10th week	Basics of timber structures calculation – bearing capacity, stability and usability.
11th week	Classical roof structures.
12th week	Glued laminated timber structures. Third assignment of the semester.
13th week	Fasteners, connections and fittings of wooden structures.
14th week	Designing and construction of timber structures. Fourth assignment of the semester.
15thweek	2nd TEST (colloquium)
16thweek	FINAL EXAM.
17th week	Verification of the semester and mark enrollment.
18th-21st week	Additional lessons and correctional exam term.

Opterećenje studenata:

Nedjeljno

4.0 kredita x 40/30 = 5 sati i 33minuta
struktura:

2 sata predavanja
1sat vježbanja
1 sat laboratorijskog vježbanja
1 sat i **33** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (5 sati i 33 minuta) x 16 =
88 sati i 8 minuta
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (5 sati i 33 minuta)=
11 sati i 6 minuta
Ukupno opterećenje za predmet : 4.0 x 30 = 120 sati
Dopunski rad: 20 sati i 46 minuta
Struktura opterećenja: 88 sati i 8 min. (nastava) + 11 sati i 6 min. (prip.) + 20 sati i 46 min. (dop.r.)

Student workload:

Weekly

4.0 credits x 40/30 = 5 hours and 33 minutes
Structure:

2hours of lectures
1hour of tutorials
1 hour of laboratory
1 hour and **33** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 =
88 hours and 8 minutes
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) =
11 hours and 6 minutes
Total hours for the course: 4.0x30 = **120 hours**
Additional hours: 20 hours and 46 minutes
Structure of workload:88 h and 8 min (lectures)+ 11 h and 6 min (preparation) + 20 h and 46 min (add. hours)

Literatura / Literature:

Literatura / Literature:

- Buđevac D., Marković Z., Bogavac D., Tošić D.: Metalne konstrukcije,
- knjiga 1 (Osnove proračuna i konstruisanja) i knjiga 2 (Specijalna poglavlja i tehnologija izrade),
- Građevinski fakultet u Beogradu, Beograd, 1999.
- McCormac J.C.: Structural Steel Design, HarperCollins College Publishers, New York, 1995.
- Gojković M., Stojić D.:Drvene konstrukcije, GF BG i Grosknjiga, Beograd, 1996.
- Goldstein W.E.: Timber Construction for Architects and Builders, McGrow-Hill, USA, 1999.

Dopunska literatura / Additional literature:

- Zarić B., Stipanić B., Buđevac D.: Čelične konstrukcije u građevinarstvu, Građevinska knjiga, Beograd, 1989.
- Gojković M. i dr.: Drvene konstrukcije - rešeni primeri iz teorije i prakse, GF BG i Grosknjiga, Beograd, 1989.

Oblici provjere znanja i ocjenjivanje:

Provjera znanja vrši se kontinuirano tokom semestra i na završnom ispitu. Maksimalno student u toku semestra može osvojiti 100 poena. Ocjenjuje se sljedeće:

- prisustvo nastavi: 3 do 4 (za 70% prisustva nastavi student dobija 3 poena)
- semestarki rad: 4 x (4.5 do 9) = 18 do 36 (za min pozitivno ocijenjen zadatak dobija se 4.5 poena)
- kolokvijumi: 2 x (15 do 30) = 30 do 60
- završni ispit: do 50

Kolokvijumi i završni ispit se rade pismeno.

Forms of Assessment:

Assessments are conducted continuously throughout the semester and the final exam. During the semester, a student can earn 100 points at maximum rate. It is estimated as follows:

- Attendance: 3 to 4 (for 70% of attendance, student receives 3 points)
- Semester assignment: 4 x (4.5 to 9) = 18 to 36 (for minimally positively evaluated task student receives 4.5 points)
- Tests: 2 x (15 to 30) = 30 to 60
- Final exam: up to 50

Dati su minimalan potreban/moguć broj bodova i maksimalan broj bodova. Prelaznaocjena se dobija ako se sakupi najmanje 51 poen.	Each test and the final exam are done in written form. The minimally necessary / possible number of points and maximum points are provided. Passing grade is obtained if at least 51 points are collected.

Očekivani ishodi učenja:	**Expected learning outcomes:**
Očekuje se da student, nakon položenog ispita Konstruktivni sistemi 2 (čelične i drvene konstrukcije): 1. Poznaje odgovarajuće konstruktivne sisteme (čelične i drvene konstrukcije) i sposoban je da procijeni i odabere adekvatno konstruktivno konstuktivno i građevinsko rješenje, kao i odgovarajuće rješenje materijalizacije, u skladu sa arhitektonskim projektom; 2. Posjeduje sposobnost da sintezno koristi znanje iz konstruktivne i građevinske tematike, kao i poznavanje aktuelnih tehnologija, u procesu projektovanja; 3. Posjeduje adekvatno znanje o fizičkim osobinama i karakteristikama građevinskih materijala, komponenata i sistema, kao i uticajima izbora istih na životnu sredinu.	It is expected that the student after passing the exam Structural Systems 2 (steel and wooden structures): 1. Knows proper constructive systems (steel and wooden structures and is able to evaluate and choose appropriate constructive and building a constructive solution as well as the appropriate solution materialization, in accordance with the architectural design; 2. Has the ability to use knowledge synthesis of structural and construction topics, as well as knowledge of current technology in the design process; 3. Has adequate knowledge of the physical properties and characteristics of building materials, components and systems, as well as the influence of the same choices on the environment.
Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:	**Methods for assessing the quality and ensuring preferred learning outcomes:**
Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).
Napomena:	**Admonishment:**
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.	Further information about the subject can be obtained from the course teacher, Head of the study program and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**URBANISTIČKO PROJEKTOVANJE 1**
Course title:	**URBAN DESIGN 1**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
5.6.	**obavezan / required**	**V**	**7.0**	**2P+4V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Primarni zadatak nastave jeste upoznavanje sa osnovnim principima urbanističkog projektovanja. Razmatraju se teoretska i praktična iskustva urbanističkog projektovanja kao i stepen determisanosti smjernica i regulacija koje se pojavljuju u projektu. Naročita pažnja posvećuje se razumjevanju restrikcija preskripcija i smjernica kao prepoznatljivih formi preko kojih se pravila urbanističkog projektovanja ispoljavaju.

Course aims:

The primary task of teaching is to introduce students to the basic principles of urban design. It discusses the theoretical and practical experiences in urban design, as well the degree determining guidelines and regulation that appear in the project. Particular attention is paid to understanding the restrictions on prescriptions and guidelines as recognizable form which exhibits the rules of urban design.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc.dr Svetlana K. Perović

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

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	Osnovni pojmovi i definicija urbanističkog projektovanja, funkcija, karakteristike i instrumenti.
II nedjelja	Projektni program urbanističkog projektovanja
III nedjelja	Tipologija fizičkih struktura u funkciji urbanističkog projektovanja.
IV nedjelja	Pojam i karakteristike urbanističke kompozicije.
V nedjelja	Urbana kompozicija i gradske funkcije.
VI nedjelja	Urbanističko projektovanje stambenih struktura.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Urbanističko projektovanje u procesu i programima urbane obnove.
IX nedjelja	Estetski kriterijumi u urbanističkom projektovanju

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Basic terms and definitions of urban design, functions, features and tools.
2nd week	Project programme of urban design.
3rd week	Typology of physical structures in the function of urban design.
4th week	The concept and characteristics of urban composition.
5th week	Urban composition and city functions.
6th week	Urban design of residential structures.
7th week	1st TEST (colloquium)
8th week	Urban planning in process and programs of urban renewal.
9th week	Aesthetic criteria of urban design.

X nedjelja	Socijalni i ekološki aspekti urbanističkog projektovanja.
XI nedjelja	Ekonomika urbanističkog projektovanja.
XII nedjelja	Participacija građana u urbanističkom projektovanju.
XIII nedjelja	Implementacija urbanističkih projekata.
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Završni ispit-popravni
XVII nedjelja	Ovjera semestra i upis ocjena. Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

10th week	Social and ecological aspects of urban design.
11th week	Economics of urban design.
12th week	Participation of citizens in urban design.
13th week	The implementation of urban projects.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	FINAL EXAM.
17th week	Verification of the semester and mark enrollment. Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

7.0 kredita x 40/30 = 9 sati i 20 minuta

Struktura: 2 sata predavanja
4 sat računskih vježbi
3 sata i 20 min samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (9 sati 20 min) x 16 = **149sati i 17 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (9 sati i 20 min) = **18 sati i 40 minuta**

Ukupno opterećenje za predmet: 7.0x30 = **210 sati**
Dopunski rad: **42 sata i 3 minuta**
Struktura opterećenja: 149 sati i 17 minuta (Nastava) + 18 sati i 40 min (Priprema) + 42 sata i 3 minuta (Dopunski rad) = 210 sati

Student workload:

Weekly

7.0 credits x 40/30 = 9 hours and 20 minutes

Structure: 2 hours of lectures
4 hour for tutorial
3 hours and 20 minutes of individual work, including consultations

During the semester

Teaching and the final exam: (9 h 20 min) x 16 = **149 h 17 min**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (9 hours and 20 minutes) = **18 hours and 40 minutes**
Total hours for the course:7.0x30 = **210 hours**
Additional hours: 42 hours and 3 minutes
Structure of workload: 149 h 17 min (lectures)+ 18 h 40 min (preparation) + 42 h 3 min (Additional hours) = 210 hours

Literatura / Literature:

- Philippe Panerai: **Urban Forms**, Oxvord 2004.
- Radović, Ranko: **Forma grada, osnove, teorija i praksa**, GK Beograd 2004.
- Lynch, Kevin: **The Image ofthe City**, Cambridge MA: MIT Press,1960.
- David Grahame Shane: **Recombinant urbanism**, Chichester 2005.
- Eva Vaništa Lazarević: **Urbana Obnova**, AF Beograd 2002.
- Bogdanović, Ivana: **Urbana regeneracija višespratnog stanovanja**, Zad. Andrejević, Beograd 2009.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.

- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.

- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Nakon položenog ispita student će biti u mogućnosti da:

1. Objasni principe urbanističkog projektovanja sa funkcionalnog, prostornog, socio-ekonomskog, ekološkog aspekta u kulturnom kontekstu
2. Protumači modele implementacije urbanističkog projekta u praksu
3. Prepozna tipološke specifičnosti fizičke struktura grada u konkretnom kontekstu
4. Rješava manje zahtjevne urbanističke probleme u praksi
5. Razvija timski i kreativni rad i kritičko mišljenje u procesu urbanističkog projektovanja
6. Adekvatno predstavi rezultate rada

Expected learning outcomes:

Nakon položenog ispita student će biti u mogućnosti da:

1. Objasni principe urbanističkog projektovanja sa funkcionalnog, prostornog, socio-ekonomskog, ekološkog aspekta u kulturnom kontekstu
2. Protumači modele implementacije urbanističkog projekta u praksu
3. Prepozna tipološke specifičnosti fizičke struktura grada u konkretnom kontekstu
4. Rješava manje zahtjevne urbanističke probleme u praksi
5. Razvija timski i kreativni rad i kritičko mišljenje u procesu urbanističkog projektovanja
6. Adekvatno predstavi rezultate rada

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:

Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena

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

prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	transience (quality management system in accordance with ISO 9001).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**EKOLOŠKI PRINCIPI U ARHITEKTURI**
Course title:	**ECOLOGICAL PRINCIPLES IN ARCHITECTURE**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
6.1.	**obavezan / required**	**VI**	**5.0**	**2P+3V**

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

Uslovljenost drugim predmetima:

Položeni ispiti iz: Arhitektonska fizika

Prerequisites:

Passed exams: Architecture physics

Ciljevi izučavanja predmeta:

Analiza principa, kriterijuma i modela u arhitekturi zasnovanih na uvažavanju uzajamnih uticaja između prirodne i građene sredine na određenoj lokaciji. Projektovanje bioklimatske arhitekture zahtijeva znanja o osnovnim principima pasivnog korišćenja obnovljivih izvora energije – sunca i vjetra u prvom redu, uključujući i odgovarajuća poglavlja iz klimatologije.

Course aims:

Analysis of principles, criteria and models in architecture based on respect for mutual influences between the natural and the built environment at the particular location. Bioclimatic architecture design requires knowledge of the basic principles of passive usage of renewable energy – solar and wind power as main topic, including the relevant sections of climatology.

Predmetni nastavnik – Lecturer /	Prof. dr Dušan Vuksanović
Saradnici u nastavi – teaching assistants	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja i izrada seminarskog rada (projektovanje po principima bioklimatske arhitekture)

Teaching methods and learning activities:

Lectures and preparation of the seminar work (design according to the principles of bioclimatic architecture)

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvodno predavanje: pojmovi, ciljevi, aktuelni status discipline u svijetu i kod nas
II nedjelja	Ishodišta i razvoj ekološkog građenja (građenje i ekologija, energetska svijest i bioklimatsko oblikovanje)
III nedjelja	Tradicionalna (vernakularna) gradnja kao rezultat prilagođavanja prirodnom okruženju (u C.G., u svijetu)
IV nedjelja	Podaci za bioklimatsko planiranje i projektovanje

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introductory lecture: concepts, objectives, current status of the discipline in global and on the local level
2nd week	Origins and development of ecological construction (construction and ecology, energy awareness and bioclimatic design)
3rd week	Traditional (vernacular) building as the result of adapting the natural environment (in Montenegro and in the world)
4th week	Data for the bioclimatic design and planning -

	- klimatski uticaji i aspekti toplotnog odziva		climate impacts and aspects of the thermal response
V nedjelja	Koncepti i oblikovanje u arhitekturi: razvoj i tendencije	5th week	Concepts and design in architecture: the development and the tendency
VI nedjelja	Kontrola toplotnih gubitaka i dobitaka: oblik, površina omotača, raspored i veličina otvora, orijentacija	6th week	Heat loss and gain control: the shape, the envelope surface, rhythm and size of openings, orientation
VII nedjelja	KOLOKVIJUM I	7th week	1st TEST (colloquium)
VIII nedjelja	Solarna geometrija, stereografski dijagrami, konstrukcija sjenki, orijentacija zgrade u odnosu na sunce i vjetar	8th week	Solar geometry, stereographic diagrams, construction of shadows, the orientation of the building relative to the sun and wind
IX nedjelja	Primjena obnovljivih izvora energije: principi pasivnog hlađenja i prirodne ventilacije prostora Posebni aspekti sistema i komponenti za pasivno hlađenje i ventilaciju: poprečna i uzgonska ventilacija	9th week	Utilization of renewable energy sources: the principles of passive cooling and natural ventilation area Specific aspects of systems and components for passive cooling and ventilation: transverse and airfoil ventilation
X nedjelja	Primjena obnovljivih izvora energije: principi energetski efikasnog dnevnog osvjetljavanja prostora	10th week	Utilization of renewable energy sources: the principles of energy efficient of the lighting in the living spaces
XI nedjelja	Posebni aspekti energetski efikasnog dnevnog osvjetljaja: funkcionalne relacije između osvjetljavanja i prirodne ventilacije	11th week	Specific aspects of energy-efficient of day lighting: functional relationship between lighting and natural ventilation
XII nedjelja	Solarna geometrija, stereografski dijagrami, konstrukcija sjenki, orijentacija zgrade u odnosu na sunce i vjetar	12th week	Solar geometry, stereographic diagrams, construction of shadows, the orientation of the building relative to the sun and wind
XIII nedjelja	Primjena obnovljivih izvora energije: principi pasivnog hlađenja i prirodne ventilacije prostora Posebni aspekti sistema i komponenti za pasivno hlađenje i ventilaciju: poprečna i uzgonska ventilacija	13th week	Utilization of renewable energy sources: the principles of passive cooling and natural ventilation of the space Specific aspects of systems and components for passive cooling and ventilation: transverse and airfoil ventilation
XIV nedjelja	KOLOKVIJUM II	14th week	2nd TEST (colloquium)
XV nedjelja	Završni ispit.	15th week	FINAL EXAM
XVI nedjelja	Ovjera semestra i upis ocjena.	16th week	Verification of the semester and mark enrollment.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.	17th week	*Additional lessons and submission of graphic elaborate (second term)*
XVIII-XXI nedjelja		18th-21st week	

Opterećenje studenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:
2 sata predavanja
3 sata vježbanja
1 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)= **13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:
2 hours of lectures
3 hour for tutorial
1 hours and **40** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

- Pucar M., Pajević M., Jovanović Popović M.: "Bioklimatsko planiranje i projektovanje – urbanistički parametri", Zavet, Beograd, 1994.
- Zbašnik Senegačnik M.: "Pasivna kuća", SUN ARH doo, Zagreb, 2009.
- Pucar M.: "Bioklimatska arhitektura – zastakljeni prostori i pasivni solarni sistemi", Monografija, Posebna izdanja/IAUS, br.45, 2006.
- Popović-Jovanović M.: "Zdravo stanovanje", Arhitektonika, Arhitektonski fakultet Univerziteta u Beogradu, Beograd, 1991.

- Vuksanović D.: “Tradicionalna arhitektura Crne Gore i bioklimatizam”, Monografija, Zadužbina Andrejević, Beograd, 1998.
- Olgyay V.: “Design with Climate”, Princeton University Press, N.J., 1962.
- Neufert E.: “Arhitektonsko projektovanje”, Građevinska knjiga, Beograd, 1996

Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 15 poena
- II kolokvijum : maksimum 15 poena
- Seminarski rad : maksimum 40 poena
- Završni ispit : maksimum 20 poena

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

- Ocjene: A (91-100); B (81-90); C (71-80); D (61-70); E (51-60); F (manje od 51 poen).

Forms of Assessment:

* Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 15 points
- Second test: maximum 15 points
- Seminar work: maximum 40 points
- Final exam: maximum 20 points

** Passing grade is obtained if the student achieved at least 51 points.

- Rating: A (91-100) B (81-90) C (71-80) D (61-70) E (51-60), F (below 51 points).

Očekivani ishodi učenja:

Očekuje se dastudent, nakon položenog ispita Ekološki principi u arhitekturi:
1. Posjeduje adekvatno znanje iz principa održivog razvoja, koje koristi u procesu projektovanja;
2. Razumije uticaj objekta na životnu sredinu.

Expected learning outcomes:

It is expected that the student after passing the exam Ecological principles in architecture:
1. Has adequate knowledge of the principles of sustainable development, which is used in the design process;
2. Understands the impact of the facility on the environment.

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).

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).

Napomena:

Vježbe se izvode za grupe od 3 - 4 studenta. Po potrebi predavanja se mogu izvoditi i na engleskom jeziku.

Admonishment:

The tutorials are performed in groups of 3 - 4 students. If it is necessary, classes might be taught in English.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**TEORIJA ARHITEKTURE 3**
Course title:	**THEORY OF ARCHITECTURE 3**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
6.2.	**obavezan / required**	**VI**	**2.0**	**2P+0V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

U okviru predmeta će biti predstavljen skup teorija arhitekture i njihovih interpretacija u različitim razdobljima istorije arhitekture sa naglaskom na savremeno doba.

Course aims:

Within the course would be presented with a set of theories of architecture and their interpretation in different periods of architectural history with emphasis on contemporary age.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Doc Dr Slavica Stamatović Vučković
	/

Metode nastave i savladavanje gradiva:

Predavanja svakog poglavlja sa projekcijama, obavezne konsultacije, učenje, kolokvijumi i završni ispit (semestralni rad).

Teaching methods and learning activities:

The lectures of each chapter with projections, mandatory consultation, teaching, colloquiums and final exam (semester work)

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Pregled teorija arhitekture i savremenog arhitektonskog projektovanja
II nedjelja	Pregled teorija estetike - problem stalnosti i promjenjivosti u definisanju estetskih kategorija
III nedjelja	Pregled teorija estetike u antičkoj i srednjevjekovnoj arhitekturi
IV nedjelja	Pregled teorija estetike od renesanse do pojave moderne (smjena paradigmi mišljenja)
V nedjelja	Arhitektura i društveno – istorijski uslovi (industrijska revolucija, pojava moderne)
VI nedjelja	Modernizam – promjena ideološke osnove poimanja istine u savremenoj kulturi (kritika kulture)
VII nedjelja	SLOBODNA NEDJELJA
VIII nedjelja	KOLOKVIJUM I
IX nedjelja	Percepcija i memorija - kategorije vremena, modeli opažanja prostora (Gestalt psihologija opažanja, posmatranje odnosa primarnih

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Overview of theories of architecture and contemporary architectural design
2nd week	Review of the theories of aesthetics - the problem of constancy and variability in defining the aesthetic categories
3rd week	Review of the theories of aesthetics in ancient and mediaeval architecture
4th week	Review of the theories of aesthetics from the Renaissance to the advent of modern (paradigm shifts reviews)
5th week	Architecture and socio - historical conditions (industrial revolution, the emergence of modern)
6th week	Modernism - change the ideological basis of perception of the truth in contemporary culture (cultural critique)
7th week	FREE WEEK.
8th week	1st TEST (colloquium)
9th week	Perception and memory - the categories of time, models of space perception (Gestalt psychology of perception, observation of relationship of

	geometrijskih formi)		primary geometric forms)
X nedjelja	Egzistencijalistička teorija prostora – razvoj prostorno – vremenskih kategorija koje nastaju kroz odnos prema neposrednom okruženju	10th week	Existentialist theory of space - physical development - the time category resulting through the relationship to the immediate environment
XI nedjelja	Arhitektonska komunikacija – semiotički diskurs arhitekture (znak, simbol, značenje)	11th week	Architectural Communications - semiotic discourse architecture (sign, symbol, meaning)
XII nedjelja	Arhitektura i ideologija (arhitektura, kultura i politika; arhitektura i identitet, potrošačko društvo)	12th week	Architecture and Ideology (architecture, culture and politics architecture and identity, consumerism)
XIII nedjelja	Savremene teorije i koncepti – postmodernističke i poststrukturalističke teorije	13th week	Contemporary theories and concepts - postmodernist and poststructuralist theory
XIV nedjelja	Percepcija i memorija - kategorije vremena, modeli opažanja prostora (Gestalt psihologija opažanja, posmatranje odnosa primarnih geometrijskih formi)	14th week	Perception and memory - the categories of time, space models of perception (Gestalt psychology of perception, observation of the relationship of primary geometric forms)
XV nedjelja	KOLOKVIJUM II	15th week	2nd TEST (colloquium)
XVI nedjelja	Završni ispit.	16th week	FINAL EXAM.
XVII nedjelja	Ovjera semestra i upis ocjena.	17th week	Verification of the semester and mark enrollment.
XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.	18th-21st week	Additional lessons and exam term.

Opterećenje studenata:

Nedjeljno
2.0 kredita x 40/30 = 3 sata i 6 minuta
Struktura: 2 sata predavanja
1 sat i **6** minuta samostalnog rada, uključujući konsultacije

U toku semestra
Nastava i završni ispit: (3 sata i 6 min) x 16 = **49 sati i 36 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (3 sata i 6 minuta) = **6 sati i 12 minuta**

Ukupno opterećenje za predmet 2.0x30 =**60 sati**

Dopunski rad: **4 sata i 12 minuta**
Struktura opterećenja: 49 sati i 36 min. (Nastava) + 6 sati i 12 min. (Priprema) +4 sata i 12 min. (Dopunski rad) = 60 sati

Student workload:

Weekly
2.0 credits x 40/30 = 3 hours and 6 minutes
Structure: 2 hours of lectures
1 hours and **6** minutes of individual work, including consultations

During the semester
Teaching and the final exam: (3 hours and 6 min) x 16 = **49 hours and 36 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **6 hours and 12 minutes**
Total hours for the course: 62.0x30 = **60 hours**
Additional hours: 4 hours and 12 minutes
Structure of workload: 49 hours and 36 min (lectures) + 6 hours and 12 min (preparation) + 4 hours and 12 min (Additional hours) = 60 hours

Literatura / Literature:

- Vladimir Mako. *Estetičke misli o arhitekturi, 1, 2 i 3.* Beograd: Arhitektonski fakultet, 2011.
- Kenet Frempton. *Moderna arhitektura, kritička istorija.* Beograd: Orion Art, 2004.
- P. Bojanić, V. Djokić, ur. *Teorija arhitekture i urbanizma*. Beograd: Arhitektonski fakultet, 2009. (izabr. poglavlja)
- Andrew Benjamin.*Architectural Philosophy*. Beograd: Clio, 2011.
- Hays, Michael K. (ed.) *Architecture Theory since 1968*. Camb. Mass.: The MIT Press, 1998. (izabr. poglavlja)
- Leach N. (ed), *Rethinking Architecture – A Reader in Cultural Theory*. London: Routledge, 1997. (izabr. poglav.)

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen seminarski rad.
** Semestralni rad: Student bira temu koju mu nastavnik odobrava i piše rad (min. 3000, max. 5000 riječi) sa ilustracijama i bibliografijom (stampa, A4 format, predaje se na kraju semestra). Izrada kratkog eseja (do 500 rijeci) nije obavezna.

- Uredno pohađanje nastave: ukupno 5 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : max 20 poena / min 11 p.
- II kolokvijum : max 20 poena / min 11 p.
- Kratki esej na zadatu temu (izmedju kolokvijuma)
- : max 5 poena
- Završni ispit : max 50 poena / min 26 p.

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

Forms of Assessment:

* Student has to pass both tests and positively evaluated seminar thesis.
** Semester work: Student selects a topic that his teacher approve and writing a paper (minimum 3000 max. 5000 words), with illustrations and bibliography (printed, A4 format, shall be submitted at the end of the semester). Making a short essay (up to 500 words) is not required.

- Regular attendance of classes: 5 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points / min 11 p.
- Second test: maximum 20 points / min 11 p.
- A short essay on a given topic (between colloquiums): maximum 5 points
- Final exam: maximum 50 points / min 26 p.

** Passing grade is obtained if the student achieved at least 51 points.

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Teorije arhitekture III:
1. Posjeduje znanje o kulturnoj i intelektualnoj istoriji, teoriji i

Expected learning outcomes:

It is expected that the student after passing the exam Theory of Architecture II:
1. Has skills about the cultural and intellectual history, theory and

tehnologijama koje su od značaja za arhitektonsko i urbanističko projektovanje;
2. Razumije i objašnjava uticaj istorije i teorije na prostorne, društvene i tehnološke aspekte arhitekture;
3. Primjenljuje adekvatno i promišljeno poznavanje teorijskih koncepata, u procesu arhitektonskog i urbanističkog projektovanja;
4. Posjeduje razumijevanje o kreativnoj primjeni ostalih oblika umjetnosti i značaju njihovog uticaja na arhitekturu.

technologies that are important for architectural and urban design
2. Understands and explains the impact of history and theory of spatial, social and technological aspects of architecture
3. Applies appropriately and judiciously knowledge of theoretical concepts of architectural and urban design
4. Has an understanding of the creative application of other forms o art and their importance and influence on architecture

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).

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).

Napomena:

Predavanja se izvode za oba studija zajedno. Ukoliko nije položen jedan ili oba kolokvijuma nastavnik može dati mogućnost za održavanje popravnih kolokvijuma, pismenim ili usmenim putem. Za izradu semestralnih radova, u zavisnosti od teme, studenti dobijaju dodatnu literaturu.

Admonishment:

Lectures are conducted for both studies together. If it is not passed one or both colloquiums the teacher may give the opportunity for correctional maintenance of the colloquium, in writing or orally. To create a semester of work, depending on the topic, students will be granted to the additional reading.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**URBANISTIČKO PROJEKTOVANJE 2**
Course title:	**URBAN DESIGN 2**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
6.6.	**obavezan / required**	**VI**	**7.0**	**2P+4V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Težište istraživanja na ovom predmetu je bazirano na tehnike metode oblikovanja spoljašnjeg prostora.; Upoznavanje sa osnovnim principima dizajniranja prostora koristeći različite metode vizuelizacije oblika.

Course aims:

The research on this subject is based on the techniques of contouring methods outer space; Understanding the basic principles of the space design by using different methods of forms visualization.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc.dr Svetlana K. Perović

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

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	Istorija i teorija Urbanog dizajna
II nedjelja	Nove globalne vrijednosti i politika
III nedjelja	Prostorna kompozicija (grad, četvrt, blok, kompleksi, objekti)
IV nedjelja	Urbana regeneracija (unapređenje i kontrola gradskih ambijenata)
V nedjelja	Prostorna koncepcija –multifunkcionalni i multidimenzionalni dizajn
VI nedjelja	Prostorna koncepcija –trans fizički grad, grad kao interface, integralni urbanizam
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Oblikovanje i struktuiranje urbanog tkiva
IX nedjelja	Metoda vizuelizacije oblika(marketiranje, viziranje, profilisanje i percipiranje)
X nedjelja	Tehnike i modeli estetizacije urbanih oblika
XI nedjelja	Metode i tehnike kvantifikacije
XII nedjelja	Urbani dizajn po konceptu i modelu održivog razvoja
XIII nedjelja	Informatičke tehnike u procesu oblikovanja,

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	History and Theory of Urban Design.
2nd week	New global values and policy
3rd week	The spatial composition (city, district, block, complexes, buildings).
4th week	Urban regeneration (improvement and control of urban environments).
5th week	Spatial Conception - Multifunctional and multidimensional design.
6th week	The spatial concept – trans physical city, the city as interface, integrated urban planning.
7th week	1st TEST (colloquium)
8th week	Formation and structuring of the urban tissue.
9th week	Methods of Forms visualization (marketing of sighting, profiling and perception)..
10th week	Techniques and models for aesthetics of urban form .
11th week	Methods and techniques for quantifying.
12th week	Urban design as a concept and model for sustainable development.
13th week	Information technology in the design process,

	tehnike građenja i opremanja
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	
	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

	construction techniques and equipment.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment
17th week	
	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno
7.0 kredita x 40/30 = 9 sati i 20 minuta
Struktura: 2 sata predavanja
4 sat računskih vježbi
3 sata i 20 min samostalnog rada, uključujući konsultacije

U toku semestra
Nastava i završni ispit: (9 sati 20 min) x 16 = **149 sati i 17 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (9 sati i 20 min) = **18 sati i 40 minuta**

Ukupno opterećenje za predmet: 7.0x30 = **210 sati**
Dopunski rad: **42 sata i 3 minuta**
Struktura opterećenja: 149 sati i 17 minuta (Nastava) + 18 sati i 40 min (Priprema) + 42 sata i 3 minuta (Dopunski rad) = 210 sati

Student workload:

Weekly
7.0 credits x 40/30 = 9 hours and 20 minutes
Structure: 2 hours of lectures
4 hour for tutorial
3 hours and 20 minutes of individual work, including consultations

During the semester
Teaching and the final exam: (9 h 20 min) x 16 = **149 h 17 min**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (9 hours and 20 minutes) = **18 hours and 40 minutes**
Total hours for the course: 7.0x30 = **210 hours**
Additional hours: 42 hours and 3 minutes
Structure of workload: 149 h 17 min (lectures)+ 18 h 40 min (preparation) + 42 h 3 min (Additional hours) = 210 hours

Literatura / Literature:

- Philippe Panerai: **Urban Forms**, Oxford 2004.
- Radović, Ranko: **Forma grada, osnove, teorija i praksa**, GK Beograd 2004.
- Lynch ,Kevin. **The Image ofthe City**, Cambridge MA: MIT Press,1960.
- Gordov, Cullen: **Gradski pejsaž**, GK Beograd 2007.
- Camilo, Zite: **Umjetničko oblikvanje gradova**,GK 2006.
- Laurens, Halprin: **Gradovi** , GK Beograd 2006.
- Moughtin Cliff: **Urban Design green dimensions** Amsterdam, 2005.
- Tošković, Dobrivoje: **Urbani dizajn**, Akademska misao,Beograd 2008.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Urbanističko projektovanje 2:
1. Razumije funkcionalno-prostorne i društvene tranformacije grada;
2. Poznaje kompleksnu problematiku koncipiranja, razrade i realizacije urbanističkog projekta;
3. Razumije izazove urbanističkog projektovanja u savremenoj praksi;
4. Ima sposobnost da integriše stečena znanja kroz timski i kreativni rad i kritičko mišljenje u procesu urbanističkog projektovanja.

Expected learning outcomes:

It is expected that the student after passing the exam Urban Design 2:
1. Understand the functional-spatial and social transformation of the city;
2. Has knowledge of the complex problem of conception, development and implementation of urban development projects;
3. Understands the challenges of urban design in contemporary practice;
4. Has the ability to integrate acquired knowledge through team work and creative and critical thinking in the process of urban design.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study program and Vice Dean for

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

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

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

Uslovljenostdrugimpredmetima:

Nema uslovoljenosti.

Prerequisites:

No prerequisites.

Ciljeviizučavanjapredmeta:

Kroz ovaj kurs se kroz urbanu geografiju i naucni pristup tretira temetika gradova Crne Gore od njihovog postanka pa zakljucno 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.

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

	Razvlacece konstrukcije. Pneumaticne konstrukcije.		Stretching structure. Pneumatic structures.
XI nedjelja	Trodimenzionalni sistemi. Štapasti sistemi u dva, tri i četiri pravca, čvorne veze.	11th week	Three-dimensional systems. Stick systems of two, three or four directions, the nodal connections.
XII nedjelja	Razvoj prostornih struktura. Klasifikacija, principi konstruisanja, metode izbora sistema.	12th week	The development of spatial structures. Classification, principles of construction, method of election systems.
XIII nedjelja	Geometrijske osnove prostornih struktura. Platonovi i Arhimedovi poliedri.	13th week	Geometrical basis of spatial structures. Plato and Archimedes polyhedron.
XIV nedjelja	KOLOKVIJUM II	14th week	2nd TEST (colloquium)
XV nedjelja	Završni ispit.	15thweek	FINAL EXAM.
XVI nedjelja	Ovjera semestra i upis ocjena.	16thweek	Verification of the semester and mark enrollment.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.	17th week	Additional lessons and exam term.
XVIII-XXI nedjelja		18th-21st week	

Opterećenjestudenata:

Nedjeljno
4.0 kredita x 40/30 = 5 sati i 33 minuta
Struktura:2 sata predavanja
2 sat računskih vježbi
1 sat i **33**minutasamostalnograda, uključujućikonsultacije

U toku semestra
Nastava i završni ispit: (5 sati i 33 min) x 16 = **88 sati i 48min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (5 sati i 33 minuta) = **11 sati i 6 minuta**

Ukupno opterećenje za predmet 4.0x30 =**120 sati**

Dopunski rad: **20 sati i 6 minuta**
Struktura opterećenja: 88 sati i 48 min. (Nastava) + 11 sati i 6 min. (Priprema) +20 sati i 6 min. (Dopunski rad) = 120 sati

Student workload:

Weekly
4.0 credits x 40/30 = 5 hours and 33 minutes
Structure: 2 hours of lectures
2 hours of tutorial
1 hours and **33**minutes of individual work, including consultations

During the semester
Teaching and the final exam: (5 hours and 33 min) x 16 = **88 hours and 48 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 48min) = **11 hours and 6 minutes**
Total hours for the course:4.0x30 = **120 hours**
Additional hours: 20 hours and 6 minutes
Structure of workload: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 odredena 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
- Seminarski radovi 2x1 : maksimum 20 poena
- I i II kolokvijum : maksimum 35 poena
- Završni ispit : maksimum 49 poen

** Prelaznaocjena se dobijaako student ostvarinajmanje 51 poen.

Forms of Assessment:

* Regular attendance of classes: 3.0-6.0 points
- Seminar works 2x1: maximum 20 points
- 1st and 2nd 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 konstuktivno 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).

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).

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.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTURA UNUTRAŠNJIH PROSTORA 1**
Course title:	**INTERIOR DESIGN 1**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
7.2.	**obavezan / required**	**VII**	**6.0**	**2P+3V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Kroz ciklus predavanja i izradu i predmetnog projekta studenti treba da ovladaju složenim procesom projektovanja osnovnih i kompleksnih enterijerskih cjelina različitih funkcionalnih tipologija. Nastava se izvodi kroz predavanja, vežbe i konsultacije.

Studenti izučavaju faktore koji određuju koncepte i kvalitet arhitekture unutrašnjih prostora od najstarijih civilizacija do savremenih tendencija u projektovanju, kao logične posledice novih životnih navika i potreba.

Course aims:

Through a cycle of lectures and preparation of the project, students have to improve the complex process of design basic and complex interior units through various functional typology. Teaching is conducted through lectures, exercises and workshops.

Students study the factors that determine the quality of the concepts and architecture of the interior spaces of the oldest civilizations to modern trends in design, as well as logical consequences of new habits and needs.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc. dr Veljko Radulović

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, konsultacije, učenje i samostalna izrada semestralnih zadataka.

Teaching methods and learning activities:

Lectures, tutorials, consultations, teaching and the individual work on semester tasks.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvodno predavanje. Definicije pojmova, klasifikacije i metodologije izučavanja.
II nedjelja	Razvoj arhitekture unutrašnjih prostora kroz istoriju.
III nedjelja	Analiza osnovnih elemenata arhitekture unutrašnjih prostora - klasifikacija i karakteristike
IV nedjelja	Antropološka, oblikovna i funkcionalna analiza upotrebnih predmeta u unutrašnjem prostoru
V nedjelja	Osnovni materijali u projektovanju i građenju unutrašnjih prostora
VI nedjelja	Savremeni materijali u projektovanju i građenju unutrašnjih prostora
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Svjetlo i boja u arhitekturi unutrašnjih prostora
IX nedjelja	Metodi i tehnike projektovanja arhitekture unutrašnjih prostora u stanovanju

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction. Definitions of concepts, classifications and methodologies of study.
2nd week	Development architecture of interior design throughout history.
3rd week	Analysis of the basic architectural elements of interiors - classification and characteristics
4th week	Anthropological, formal and functional analysis of useful objects in interior.
5th week	Basic materials in design and construction of interiors
6th week	Contemporary materials in design and construction of interiors
7th week	1st TEST (colloquium)
8th week	Light and color in interiors
9th week	Methods and techniques of interiors design in residential architecture.

X nedjelja	Metodi i tehnike projektovanja arhitekture unutrašnjih prostora javnih objekata
XI nedjelja	Metodi i tehnike projektovanja arhitekture unutrašnjih prostora specifične namjene
XII nedjelja	Tendencije, zahtjevi i problemi projektovanja savremene arhitekture unutrašnjih prostora
XIII nedjelja	Načini prezentacije - tehnike i medijumi predstavljanja projekata unutrašnjih prostora
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit – Predaja idejnog projekta
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

10th week	Methods and techniques of interiors design of public buildings.
11th week	Methods and techniques of interiors design of architecture for specific purpose.
12th week	Tendencies, requirements and problems of interior design in contemporary architecture.
13th week	Methods of presentation - techniques and mediums of interior design presentation.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM - Submission of preliminary design
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

6.0 kredita x 40/30 = 8 sati
Struktura: 2 sata predavanja
3 sat računskih vježbi
3 sata samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (8 sati) x 16 = **128 sati**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (8 sati) = **16 sati**
Ukupno opterećenje za predmet: 6.0x30 = **180 sati**
Dopunski rad: **36 sati**
Struktura opterećenja: 128 sati (Nastava) + 16 sati (Priprema) + 36 sati (Dopunski rad) = 180 sati

Student workload:

Weekly

6.0 credits x 40/30 = 8 hours
Structure: 2 hours of lectures
3 hour for tutorial
3 hours of individual work, including consultations

During the semester

Teaching and the final exam: (8 hours) x 16 = **128 hours**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **16 hours**
Total hours for the course: 6.0x30 = **180 hours**
Additional hours: 36 hours
Structure of workload: 128 hours (lectures)+ 16 hours (preparation) + 36 hours (Additional hours) = 180 hours

Literatura / Literature:

- Pile, John.A History of Interior Design (Laurence King Publishing, 2005)
- Mark Taylor, Julieanna Preston, Eds. INTIMUS/Interior Design Theory Reader, (Chchester : Wiley Academy, 2006)
-Plunkett , Drew. Construction and Detailing for Interior Design, (Laurence King Publishing, 200)
- Frampton, K. Modern Architecture: A Critical Histroy, (London: Thames and Hudson, 1990)
- Neufert, E. Architects Data (3rd edition), (Oxford: Blackwell Science, 2006)
- Pile, John. Interior Design, 2. Edition, (New York: Herry N. Abrams Inc. Publishers, 1998)
- Ajzenberg, A. Stilska unutrašnja arhitektrua, (Beograd: Univerzitet umetnosti, 1994)

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

** Prelazna ocjena se dobija sa najmanje 60 poena.

Forms of Assessment:

* Student has to pass both tests and positively evaluated project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

** Passing grade is obtained with at least 60 points.

Očekivani ishodi učenja:

Očekuje se daće student,nakon položenog ispita Arhitektura unutrašnjih prostora biti sposoban da:
1. Izradi projekat unutrašnje arhitekture za različite tipologije objekata, a koji ispunjava estetske i tehničke zahtjeve;
2. Izvrši analizu i kritičku ocjenu primjera i projekata unutrašnje arhitekture;
3. Poznaje osnovne elemente istorijskog razvoja unutrašnje arhitekture i njene savremene tendencije;
4. Adekvatno predstavi i prezentuje svoju projektantsku aktivnost.

Expected learning outcomes:

It is expected that the student after passing the exam of the Interior design I should be able to:
1. Creates project of residential interior architecture, which fulfills necessary aesthetic and technical requirements;
2. Performs analysis and critical assessment of examples and projects of interior architecture;
3. Has knowledge of basic elements and historical development of interior architecture and its contemporary tendencies;
4. Adequate introduces and presents his own design activity.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika.

Admonishment:

Further information about the subject can be obtained from the course lecturer.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKO PROJEKTOVANJE 5 (zdravstveni objekti)**
Course title:	**ARCHITECTURAL DESIGN 5 (buildings for medical care)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
7.3.	**obavezan / required**	**VII**	**9.0**	**3P+4V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa najznačajnijim prostorno-funkcionalnim, oblikovnim karakteristikama i metodama u organizaciji projektovanja zdravstvenih objekata.

Course aims:

Students are introduced to most important of spatial – functional, and shape properties and methods in the organization and design for buildings for medical care.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Doc.dr Dragan F. Komatina
	AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, konsultacije, studijske stručne ekskurzije, studentske radionice. Na predavanjima studenti se upoznaju sa zdravstvenim objektima i njihovim značajem, vrstama i tipologijom zdravstvenih objekata kao i prostorno – funkcionalnim karakteristikama organizacije prostora zdravstvenih objekata. Na vježbama u toku semestra studenti izrađuju jedan idejni projekat nekog zdravstvenog objekta.

Teaching methods and learning activities:

Lectures, exercises, consultations, study tours and professional student workshops. During lectures students are introduced to buildings for medical care and their importance, types and typology of buildings for medical care, as well as spatial - functional characteristics of buildings for medical care. During practical classe in the course of semester, students prepare a preliminary design of a building for medical care.

SADRŽAJ PREDMETA:

Pripremna nedjelja	*Priprema i upis semestra.*
I nedjelja	Uvod, sadržaj, metodologija, klasifikacija ... Istorijski razvoj zdravstva.
II nedjelja	Planiranje mreže, lokacije, programski zadaci za projektovanje i izgradnju zdravstvenih objekata.
III nedjelja	Preventivna zdravstvena zaštita – Dom zdravlja. Funkcija, program, službe, mreža, lokacija.
IV nedjelja	Bolničko liječenje. Bolnice - vrste, kapaciteti, funkcija, mreže, lokacije, struktura, organizacija.
V nedjelja	KOLOKVIJUM I
VI nedjelja	Bolnica - savremeni koncept izgradnje, urbanizam, sistem izgradnje, dimenzije, fleksibilnost.
VII nedjelja	Organizacija i funkcionisanje bolnice.
VIII nedjelja	Poliklinika i urgentna medicina.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction, contents, methodologies, classifications ... Historical development of building for medical care.
2nd week	Network planning, locations, program tasks for the design and construction of buildings for medical care.
3rd week	Preventive medical care - Medical Center. Function, program, service, network, location.
4th week	Hospitalization. Hospitals - type, capacity, function, network, locations, structure, organization.
5th week	1st TEST (colloquium)
6th week	Hospital - the modern concept of construction, urban planning, system construction, dimensions, flexibility.
7th week	The organization and functioning of the hospital.
8th week	Polyclinic and Medical Emergency.

IX nedjelja	Područje njege – Stacionarni dio bolnice i prijemna služba.
X nedjelja	Područje terapije – medicinske jedinice liječenja i prateće medicinske službe.
XI nedjelja	Administrativni i ekonomski dio bolnice. Tehnički i tehnološki blok i instalacije. Saobraćaj.
XII nedjelja	Rehabilitacioni centri, savremeni koncept izgradnje.
XIII nedjelja	Starački domovi, funkcija, mreže, lokacija, struktura, organizacija.
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	*Završni ispit.*
XVI nedjelja	*Ovjera semestra i upis ocjena.*
XVII nedjelja	*Dopunska nastava i popravni ispitni rok.*
XVIII-XXI nedjelja	

9th week	Maintenance area - stationary part of the hospital and admissions service.
10th week	The area of treatment - medical treatment unit and ancillary medical services.
11th week	Administrative and economic part of the hospital. Technical and technological block and installation. Traffic.
12th week	Rehabilitation centers, modern building concept.
13th week	Retirement homes, function, network, location, structure, organization.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM - Submission of preliminary design
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

9.0 kredita x 40/30 = 12 sati

Struktura: 3 sata predavanja
4 sata računskih vježbi
5 sato samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**

Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

Ukupno opterećenje za predmet: 9.0x30 = **270 sati**

Dopunski rad: **54 sata**

Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

Student workload:

Weekly

9.0 credits x 40/30 = 12 hours

Structure: 3 hours of lectures
4 hour for tutorial
5 hours of individual work, including consultations

During the semester

Teaching and the final exam: (12 hours) x 16 = **192 hours Necessary preparations** before the start of the semester (administration, registration, certification) 2 x (12 hours) = **24 hours**

Total hours for the course: 9.0x30 = **270 hours**

Additional hours: 54 hours

Structure of workload: 192 h (lectures)+ 24 h (preparation) + 54 h (add. hours) = 270 h

Literatura / Literature:

- S. Kliska, *Bolnice*, Beograd 1961.
- V. Stojaković, *Zdravstvene zgrade*
- D.Juračić, *Zdravstvene zgrade*
- *Tehničar građevinski, priručnik 4*, Beograd 1989.
- Ernest Nojfert, *Arhitektonsko projektovanje*, Bolnice 1996.
- R. Gerić, *Savremena bolnica*, Beograd, 1964.
- D. Balzaro, *Bolnice*, Beograd 1997.
- R.Božović – Stamenović, *O prostorima lečenja-centri dnevne nege*, Bgd.1997.god.
- *A Portfolio of architecture for health*. Chicago: American Hospital Association,1977.god.
- M.Noor, *Health care architecture in the Netherlands*. Rotterdam: NAI 2010.
- Verderber S., Fine D. *Healthcare Architecture in an Era of Radical Transformation.* Yale University Press
- Del Nord R. *The Culture for the Future of Healthcare Architecture.* Firence: Alinea editrice 2009.
- Wang, Mei-LingLanham, *Global health and sustainable development architecture : inclusive dialogue, partnerships, and community capital.* Lanham: University Press of America 2009.
- Imperfect Health: The Medicalization of Architecture, CCA Montreal

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.

- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Završni ispit : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.

- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Final exam: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Arhitektonsko projektovanje 5:

1. Posjeduje sposobnost da izradi i predstavi projekte objekata odgovarajuće tipologije – zdravstveni objekti, različite razmjere i složenosti;
2. Posjeduje znanje o kontekstualnosti, tj uklapanju objekta u postojeći lokalni, socijalni i fizički, kontekst;
3. Posjeduje adekvatno znanje potrebno za kritičku valorizaciju

Expected learning outcomes:

It is expected that the student after passing the exam Buildings for medical care:

1. Has the knowledge necessary to create and present projects of appropriate typology - Buildings for medical care (health facilities), different proportions and complexity;
2. Has the knowledge of contexts, ie integration of the facility into the existing local, social and physical context;
3. Has the knowledge needed for critical evaluation of

arhitektonskih projekata odgovarajuće tipologije, sa estetskog, tehničkog aspekta i aspekta potreba korisnika; 4. Poznaje istorijski razvoj odgovarajuće tipologije arhitektonskih objekata, pripadajuće teorijske koncepte, kao i savremene tendencije.	architectural designs appropriate typologies, from the aesthetic, technical aspects and aspects of user needs; 4. Knows the historical development of the corresponding typology of architectural objects, corresponding theoretical concepts, as well as modern tendencies.

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:	**Methods for assessing the quality and ensuring preferred learning outcomes:**
Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).

Napomena:	**Admonishment:**
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.	Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ZAŠTITA I REVITALIZACIJA ARHITEKTONSKOG NASLJEĐA**
Course title:	**PROTECTION AND REVITALIZATION OF THE ARCHITECTURAL HERITAGE**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
7.4.	**obavezan / required**	**VII**	**5.0**	**2P+2V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa principima i metodama zaštite graditeljske baštine i njenog korišćenja u savremene svrhe, kroz nastavu, vježbe, izradu elaborata i grafičkih radova.

Course aims:

Students learn about the principles and methods of architectural heritage and its use in modern purposes, through lectures, practice, preparation of studies and graphic works.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Prof.dr Ilija Lalošević, dipl.ing.arh.

AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, seminarski i grafički radovi.

Teaching methods and learning activities:

Lectures, exercises, essays and graphic works.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvod
II nedjelja	Terminologija zaštite i revitalizacije.
III nedjelja	Osnovi zaštite graditeljskog nasljeđa.
IV nedjelja	Dokumentacija o nepokretnim kulturnim dobrima.
V nedjelja	Klasifikacija i valorizacija graditeljskog nasljeđa.
VI nedjelja	Negativni uticajni faktori.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Opšti principi u primjeni tehničke zaštite graditeljskog nasljeđa
IX nedjelja	Oblici tehničke zaštite
X nedjelja	Očuvanje autentičnosti
XI nedjelja	Ciljevi i načela revitalizacije
XII nedjelja	Principi revitalizacije
XIII nedjelja	Mogućnosti i primjeri savremene revitalizacije
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	*Završni ispit.*
XVI nedjelja	*Ovjera semestra i upis ocjena.*

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction.
2nd week	Terminology of protection and revitalization.
3rd week	Basics of the architectural heritage.
4th week	Documentation of immovable cultural heritage.
5th week	Classification and valorization of architectural heritage.
6th week	The negative influencing factors
7th week	1st TEST (colloquium)
8th week	General principles in the application of technical protection of the architectural heritage.
9th week	Forms of technical protection.
10th week	Preservation of authenticity.
11th week	The objectives and principles of revitalization.
12th week	Principles of revitalization
13th week	Opportunities and examples of contemporary revitalization.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM
16th week	Verification of the semester and mark enrollment.

XVII nedjelja	Dopunska nastava i prijem elaborata (drugi rok).
XVIII-XXI nedjelja	

17th week	Additional lessons and admission graphic elaborate (second term)
18th-21st week	

Opterećenje studenata:

Nedjeljno
5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:
2 sata predavanja
2 sata vježbanja
2 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra
Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)= **13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly
5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:
2 hours of lectures
2 hour for tutorial
2 hours and **40** minutes of individual work, including consultations

During the semester
Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

- S. Nenadović, Zaštita graditeljskog nasleđa, Beograd 1980
- J. Nešković, Revitalizacija spomenika kulture, Beograd 1986.
- Č. Marković - R. Vujičić, Spomenici kulture Crne Gore, Presmedija-RZZSK Crne Gore, 1997.
- S. Vučenović, Urbana i arhitetktonska konzervacija, Beograd 2004.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen grafički elaborat
- Uredno pohađanje nastave : ukupno 5 poena
- 2 domaća zadatka ukupno : 5 poena
- I kolokvijum: maximum 20 poena
- II kolokvijum: maksimum 20 poena
- Grafički elaborat: maximum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points
- Two homeworks: 5 points
- First test: maximum 20 points
- Second test: maximum 20 points
- Graphic elaborate: maximum 50 points

Očekivani ishodi učenja:

Očekuje se daće studenti nakon položenog ispita Zaštita i revitalizacija graditeljskog nasljeđa imati znanja o:
1. Principima i metodama zaštite graditeljske baštine i njenog korišćenja u savremene svrhe;
2. Klasifikaciji i valorizaciji graditeljskog nasljeđa;
3. Opštim principima i ciljevima u primjeni tehničke zaštite graditeljskog nasljeđa;
4. Mogućnostima i oblicima savremene revitalizacije.

Expected learning outcomes:

It is expected that students after passing the exam Protection and revitalization of built heritage have knowledge of:
1. Principles and methods of protection of architectural heritage and its use in modern purposes;
2. Classification and valorization of architectural heritage;
3. The general principles and objectives in the application of technical protection of the architectural heritage;
4. The possibilities and forms of contemporary revitalization.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ISTORIJA I TEORIJA URBANIZMA**
Course title:	**HISTORY AND THEORY OF URBAN PLANNING**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
7.5.	**obavezan / required**	**VII**	**4.0**	**2P+1V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Primarni zadatak nastave na ovom predmetu jeste upoznavanje sa osnovnim elementima izgrađenih prostora. Predmetom se kompleksno razmatraju ključna morfološka obeležja gradskih prostora kao i njihova međuzavisnost sa konteksom u kome se nalaze.

Course aims:

The primary task of teaching in this course is to introduce the basic elements of built environment. The subject is complex considered of key morphological characteristics collected of city space as well as their correlation with the context in which they are located.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc.dr Svetislav G. Popović

AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, 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 grada kroz istoriju
II nedjelja	Praistorija
III nedjelja	Antika. Prednja Azija, Egipat, Bliski istok
IV nedjelja	Antika-Grčka
V nedjelja	Antika -Rim
VI nedjelja	Razvoj od Antičkog Rima do renesansnog grada.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Renesansni grad
IX nedjelja	Gradovi i rezidencije, Civilni grad, Kolonijalni grad....
X nedjelja	Pregled razvoja urbanizma na tlu Crne Gore; Srednjovjekovni gradovi
XI nedjelja	Renesansa urbanizma u Knjaževini-Kraljevini Crnoj Gori
XII nedjelja	Urbanizam južne regije sa osvrtom na projekat Južni Jadran 1969.god. (metodološki pristup)
XIII nedjelja	Prostorni planovi Crne Gore (metodološki pristup)
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Urban Development through the history
2nd week	Ancient history
3rd week	Antique. The front of Asia, Egypt, Middle East
4th week	Antique - Greece
5th week	Antique - Rome
6th week	The development of the Ancient Rome to the Renaissance city.
7th week	1st TEST (colloquium)
8th week	Renaissance City
9th week	Cities and residences, Civil City, Colonial town…
10th week	Overview of the development of urban planning in the territory of Montenegro; The medieval cities
11th week	Renaissance urbanism in the Principality - the Kingdom of Montenegro
12th week	Urbanism southern region, with emphasis on the project of Southern Adriatic in 1969. (methodological approach)
13th week	Spatial Plan of Montenegro (methodological approach)
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.

XVII nedjelja XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.

17th week 18th-21st week	Additional lessons and exam term.

Opterećenje studenata:

Nedjeljno
4.0 kredita x 40/30 = 5 sati i 33minuta
Struktura:
2 sata predavanja
1 sata vježbanja
2 sat i **33** min – samostalni rad, uključujući i konsultacije

U toku semestra
Nastava i završni ispit: (5 sati i 33 minuta) x 16 = **88 sati i 8 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (5 sati i 33 minuta)=**11 sati i 6 minuta**
Ukupno opterećenje za predmet : 4,0 x 30 = 120 sati
Dopunski rad: 20 sati i 46 minuta
Struktura opterećenja: 88 sati i 8 min. (nastava) + 11 sati i 6 min. (prip.) + 20 sati i 46 min. (dop.r.)

Student workload:

Weekly
4.0 credits x 40/30 = 5 hours and 33 minutes
Structure:
2 hours of lectures
1 hour for tutorial
2 hours and **33** minutes of individual work, including consultations

During the semester
Teaching and the final exam: (5 hours and 33 min) x 16 = **88 hours and 8 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **11 hours and 6 minutes**
Total hours for the course: 4.0x30 = **120 hours**
dditional hours: 20 hours and 46 minutes
Structure of workload: 88 h and 8 min (lectures)+ 11 h and 6 min (preparation) + 20 h and 46 min (add. hours)

Literatura / Literature:

- B.Milić : Razvoj grada kroz istoriju I –Prapovijest-Antika.;Školska knjiga Zagreb 1994.
- B.Milić : Razvoj grada kroz istoriju II;Školska knjiga Zagreb 1994.
- B.Milić : Razvoj grada kroz istoriju III –Novo doba; Školska knjiga Zagreb 2002.
- Z.Ivanović,;Razvoj gradova Crne Gore kroz urbanističke planove prije II svjetskog rata, Unirex Nikšić, 1986.god.
- Z.Ivanović,;Gradovi-Komunalni centri Crne Gore, SANU, Beograd 1979.god.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Istorija i teorija urbanizma:
1. Posjeduje znanja iz istorije i teorije urbanizma i shvata njihov značaj i uticaj na savremenu urbanističku misao;
2. Posjeduje sposobnost kritičke valorizacije teorijskih modela u urbanizmu i razumije njihov uticaj na prostorno-društvene transformacije kroz vrijeme;
3. Ima sposobnost primjene novih teorijskih urbanističkih modela u praktičnom djelovanju.

Expected learning outcomes:

It is expected that the student after passing the exam, history and theory of urban planning:
1. Has knowledge of history and theory of urban planning and understands their importance and influence on contemporary urban thought;
2. Has a capacity for critical valorization of theoretical models in urban development and understands their impact on spatial and social transformation through time;
3. Has the ability to apply new theoretical models of urban development in practical action.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ENERGETSKI EFIKASNAARHITEKTURA**
Course title:	**ENERGY EFFICIENCY ARCHITECTURE**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
8.1.	**obavezan / required**	**VIII**	**5.0**	**2P+2V**

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

Uslovljenost drugim predmetima:

Položeni ispiti iz: Arhitektonske fizike i Bioklimatske arhitekture

Prerequisites:

Passed exams: Architectural Physics and Bioclimatic architecture

Ciljevi izučavanja predmeta:

Usvajanje znanja o konceptu i sadržaju energetske efikasnosti zgrada; evropska i nacionalna regulativa, energetski model zgrade - energetski gubici i dobici; primjena i analiza toplotne izolacije - evropski i nacionalni standardi; zastakljeni djelovi omotača; grijanje i hlađenje; sanitarna topla voda; rasvjeta; algoritam proračuna potrošnje energije u zgradama; nacionalni pravilnici.

Course aims:

Adoption of knowledge about the concept and content of the energ efficiency in buildings; European and national legislation, energy model of the building - energy losses and gains, application and analysis of thermal insulation - European and national standards; glazed parts of envelope; heating and cooling; Sanitary hot water; lighting; algorithm calculation of energy consumption in buildings; national regulations.

Predmetni nastavnik – Lecturer / **Saradnici u nastavi – teaching assistants**	Prof. dr Dušan Vuksanović AF _ 2 saradnika

Metode nastave i savladavanje gradiva:

Predavanja i izrada seminarskog rada (projektovanje energetske efikasnosti zgrade)

Teaching methods and learning activities:

Lectures and preparation of the seminar work (design of the energy efficiency of the building)

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvodno predavanje: pojmovi, ciljevi, evropska legislativa i regulativa: direktive i standardi (EN i ISO)
II nedjelja	State of the art u nacionalnim okvirima: uspostavljeni nivo primjene toplotne zaštite u praksi, nacionalna legislativa i regulativa za energetsku efikasnost (EE)
III nedjelja	Koncept energetske efikasnosti zgrade: karakteristike omotača zgrade i energetske potrebe za grijanjem i hlađenjem; ostali oblici potrošnje energije u zgradama: sanitarna topla voda, rasvjeta
IV nedjelja	Energetski model zgrade - energetski gubici i dobici: transmisioni i ventilacioni gubici, dobici kroz omotač (solarni dobici) i unutrašnji dobici
V nedjelja	Toplotna izolacija elemenata omotača - koeficijent prolaza toplote (EN ISO 6946), specifični aspekti: toplotni mostovi, evropski i

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introductory lecture: concepts, objectives, European legislation and regulation: directives and standards (EN and ISO)
2nd week	State of the art at the national level: established level of the application of thermal protection in practice, national legislation and regulations for energy efficiency (EE)
3rd week	The concept of energy efficiency of buildings: the characteristics of the building envelope and energy needs for heating and cooling, the other forms energy use in buildings: Sanitary hot water, lighting
4th week	Energy model of the building - energy losses and gains: transmission and ventilation losses, gains through envelope (solar gains) and internal gains
5th week	Thermal insulation of envelope elements - heat transfer coefficient (EN ISO 6946), the specific aspects: thermal bridges, European and national

	nacionalni standardi (EN,ISO i MEST)		standards (EN, ISO and MEST)
VI nedjelja	Zastakljeni djelovi omotača - prozori i vrata; infiltracija, propustljivost zračenja; stakla niske emisije (Low E)	6th week	Glazed parts of envelope - windows and doors and infiltration, leakage radiation, low emission glass (Low E)
VII nedjelja	Energetski model zgrade: klima i klimatske zone u CG, srednja meteorološka godina, stepen_dan, grijanje i hlađenje	7th week	Energy model of the building: climate and climatic zones in Montenegro, the average meteorological year, degree - day, heating and cooling
VIII nedjelja	KOLOKVIJUM I	8th week	1st TEST (colloquium)
IX nedjelja	Sanitarna topla voda	9th week	Sanitary hot water
X nedjelja	Rasvjeta, osnovni parametri rasvjete, jedinice, vrste svjetiljki	10th week	Lighting, basic lighting parameters, units, types of lamps
XI nedjelja	Algoritam izračunavanja potrošnje energije u zgradama prema EN 12379	11th week	The algorithm of calculating of energy consumption in buildings according to EN 12379
XII nedjelja	Pravilnici za energetsku efikasnost u zgradarstvu	12th week	Regulations for Energy Efficiency in Buildings
XIII nedjelja	Programski paketi - software	13th week	Software packages - Software
XIV nedjelja	KOLOKVIJUM II	14th week	2nd TEST (colloquium)
XV nedjelja	Završni ispit.	15th week	FINAL EXAM.
XVI nedjelja	Ovjera semestra i upis ocjena.	16th week	Verification of the semester and mark enrollment.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.	17th week	Additional lessons and exam term.
XVIII-XXI nedjelja		18th-21st week	

Opterećenje studenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:

2 sata predavanja
2 sata vježbanja
2 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)= **13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:

2 hours of lectures
2hour for tutorial
2 hours and **40** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

- Pravilnici za energetsku efikasnost, Ministarstvo ekonomije CG, Podgorica, 2013.
- "Energetska efikasnost zgrada - Metodologija energetskog pregleda i proračuna indikatora EE, Mašinski fakultet i Arhitektonski fakultet, Podgorica 2011.
- Zbašnik Senegačnik M.: “Pasivna kuća”, SUN ARH doo, Zagreb, 2009.
- Neufert E.: “Arhitektonsko projektovanje”, Građevinska knjiga, Beograd, 1996.

Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka

- I kolokvijum : maksimum 15 poena
- II kolokvijum : maksimum 15 poena
- Seminarski rad : maksimum 40 poena
- Završni ispit : maksimum 20 poena

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

- Ocjene: A (91-100); B (81-90); C (71-80); D (61-70); E (51-60); F (manje od 51 poen).

Forms of Assessment:

* Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences

- First test: maximum 15 points
- Second test: maximum 15 points
- Seminar work: maximum 40 points
- Final exam: maximum 20 points

** Passing grade is obtained if the student achieved at least 51 points.

- Rating: A (91-100) B (81-90) C (71-80) D (61-70) E (51-60), F (below 51 points).

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Energetska efikasnost zgrada:
1. Poznaje principe održvog razvoja i metode postizanja unutrašnjeg komfora i zaštićenosti arhitektonskih objekata;
2. Poznaje savremene tendencije i tehnologije u domenu

Expected learning outcomes:

It is expected that the student after passing the exam Bioclimatic architecture:
1. Has knowledge the principles of sustainable development and methods of achieving inner comfort and protection of architectural buildings;

energetske efikasnosti.	2. Has knowledge the contemporary trends and technologies in the field of energy efficiency

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:	**Methods for assessing the quality and ensuring preferred learning outcomes:**
Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).

Napomena:	**Admonishment:**
Vježbe se izvode za grupe od 3 - 4 studenta. Po potrebi predavanja se mogu izvoditi i na engleskom jeziku. Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika.	The tutorials are performed in groups of 3 - 4 students. If it is necessary, classes might be taught in English. Further information about the subject can be obtained from the course teacher.

nastavu.	Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKO PROJEKTOVANJE 6 (objekti kulture i spektakla)**
Course title:	**ARCHITECTURAL DESIGN 6 (building for culture and spectacle)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
8.4.	**obavezan / required**	**VIII**	**10.0**	**3P+4V**

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

Uslovljenost drugim predmetima:

Nema uslovljenosti.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa najznačajnijim funkcionalnim, oblikovnim konstruktivnim karakteristikama i metodama u organizaciji projektovanja javnih objekata.

Course aims:

Students are introduced to most important of spatial - functional and formal characteristics, and methods of organization and design of public buildings.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Prof. dr Rifat Alihodžić / Doc. dr Slavica Stamatović Vučković

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, konsultacije, studijske stručne ekskurzije i studentske radionice. Na predavanjima studenti se upoznaju sa objektima kulture i spektakla, njihovim značajem za razvoj kulture, vrstama i tipologijom javnih objekata kao i prostorno – funkcionalnim karakteristikama organizacije prostora objekata kulture i spektakla. Na vježbama u toku semestra studenti izrađuju jedan idejni projekat nekog objekta kulture i spektakla.Na studentskim ekskurzijama studenti, u pratnji profesora i saradnika, obilaze karakteristične primjere objekata kulture I spektakla u okruženju, uz stručna objašnjenja i komentare na licu mjesta.

Teaching methods and learning activities:

Lectures, exercises, consultations, study tours and professional student workshops. During lectures students are introduced to residential buildings and their importance to development of Culture, types and typology of buildings for culture and spectacle, as well as spatial - functional characteristics of buildings for culture and spectacle. During practical classes in the course of semester, students prepare a preliminary design of a building for culture and spectacle. On student excursions the students, accompanied by teachers and staff, visiting typical examples of buildings for culture and spectacle, with expert explanations and comments on the site.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Objekti namijenjeni sportu. Uvod i istorijsko razvoj
II nedjelja	Borilište - Gledalište. Univerzalni principi i normativi.
III nedjelja	Stadioni.Sportsjke dvorane (multifunkcionalne i specijalizovane).
IV nedjelja	Bazeni i kupališta. Borilački sportovi.
V nedjelja	Zimski sportovi. Dvorane za hokej. Skakaonice.
VI nedjelja	Objekti namijenjeni konjičkom sportu. Analiza savremenih objekata namijenjenih sportu.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Objekti kulture i spektakla. Uvodno predavanje
IX nedjelja	Istorijski razvoj.Prostori za gledaoce i izvođače. Postorni koncepti. Normativi.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Buildings intended for sports. Introduction and historical development.
2nd week	Arena - Auditorium. Universal principles and norms.
3rd week	Stadiums. Sports halls (multifunctional and specialized)
4th week	Pools and baths. Martial sports.
5th week	Winter sports. Hockey halls. Diving boards.
6th week	Buildings for equestrian sport. Analysis of modern sport buildings.
7th week	1st TEST (colloquium)
8th week	Buildings for culture and spectacle. Introduction.
9th week	Historical development. Areas for spectators and performers. Spatial concepts. Norms.

X nedjelja	Pozorišne i bioskopske dvorane. Opere.
XI nedjelja	Muzeji i galerije. Istorijski razvoj. Različiti prostorni koncepti.
XII nedjelja	Multimedijalni kulturni centri.
XIII nedjelja	Savremeni muzeji i galerije. Analiza primjera.
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI	

10th week	Theater and cinema halls. Opera.
11th week	Museums and galleries. Historical development. Different spatial concepts.
12th week	Multimedia Cultural centers.
13th week	Contemporary museums and galleries. Analysis of the examples.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

9.0 kredita x 40/30 = 12 sati
Struktura: 3 sata predavanja
4 sata računskih vježbi
5 sato samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

Ukupno opterećenje za predmet: 9.0x30 = **270 sati**
Dopunski rad: **54 sata**
Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

Student workload:

Weekly

9.0 credits x 40/30 = 12 hours
Structure: 3 hours of lectures
4 hour for tutorial
5 hours of individual work, including consultations

During the semester

Teaching and the final exam: (12 hours) x 16 = **192 hours Necessary preparations** before the start of the semester (administration, registration, certification) 2 x (12 hours) = **24 hours**
Total hours for the course: 9.0x30 = **270 hours**
Additional hours: 54 hours
Structure of workload: 192 h (lectures)+ 24 h (preparation) + 54 h (add. hours) = 270 h

Literatura / Literature:

- Slobodan Ilić ,"Sportski objekti", Beograd 1998
- Allan Koyna, "Sports buildings", The University of Michigan,Architectural Press, 1986
- Aurora Cuito, "Sport Facilities", Loft Publications, 2005
- Michala Gibelhausen,"The Architecture of The Museum", Manchester University Press,2003.
- Paul v Naredi-Rainer, Oliver Hilger ,"Museum buildings", Birkhäuser, Publishers for Architecture, 2004.
- Philip Jodido, „Museums", Tachen ,2010.
- Iain Mackintosh , „Architecture, Actor and Audience (Theatre Concepts)", Routledge, 2004.
- Association of British Theatre Technicians, "Theatre Buildings: A Design Guide",Routledge, 2010)

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Očekuje se dastudent, nakon položenog ispita Arhitektonsko projektovanje 6:
1. Ima sposobnost da izradi i predstavi projekte objekata odgovarajuće tipologije – objekti kulture i spektakla, različite razmjere i složenosti;
2. Posjeduje znanje o kontekstualnosti, tj uklapanju objekta u postojeći lokalni, socijalni i fizički, kontekst;
3. Posjeduje adekvatno znanje potrebno za kritičku valorizaciju arhitektonskih projekata odgovarajuće tipologije, sa estetskog, tehničkog aspekta i aspekta potreba korisnika;
4. Poznaje istorijski razvoj odgovarajuće tipologije arhitektonskih objekata, pripadajuće teorijske koncepte, kao i savremene tendencije

Expected learning outcomes:

It is expected that the student after passing the exam Synthesis project IV:
1. Has the ability to develop and present projects of buildings corresponding typology - public buildings, different proportions and complexity;
2. Has knowledge of contexts, integration of the facility into the existing local, social and physical, context;
3. Has adequate knowledge needed for critical evaluation of the corresponding typology of architectural projects, from the aesthetic, technical aspects and aspects of user needs;
4. He knows the historical development of the corresponding typology of architectural objects, corresponding theoretical concepts, as well as modern tendencies.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

II nedjelja	Proces parternog projektovanja	2nd week	Process of Landscape design
III nedjelja	Prostorne vrijednosti: prirodne, kulturne, istorijske, umjetničke, društvene i individualne	3rd week	Spacious values: natural, cultural, historical, , artistic, social and individual
IV nedjelja	Tipovi sistema i urbanih zelenih površina Urbani parkovi	4th week	Types of systems and urban green areas Urban parks
V nedjelja	Parterna umjetnost u Evropi, estetika prirode	5th week	Landscape art in Europe, the aesthetics of nature
VI nedjelja	Razvoj parterne arhitekture/Vavilon , Persija,	6th week	Development of Landscape architecture/ Babylon, Persia, Egipt, Ancient Greece, Rome
VI nedjelja	Egipat, Antička Grčka, Rim/		
VII nedjelja	KOLOKVIJUM I	7th week	1st TEST (colloquium)
VIII nedjelja	Srednjevjekovni vrtovi	8th week	Medieval gardens
IX nedjelja	Renesansni vrtovi Italije	9th week	Renaissance gardens of Italy
X nedjelja	Engleski i francuski vrtovi	10th week	English and French gardens
XI nedjelja	Japanski i kineski vrtovi	11th week	Japanese and Chinese gardens
XII nedjelja	Formiranje ansambla i građevina u pejzažnom nasljedju	12th week	The formation of the ensemble and buildings in the landscape heritage
XIII nedjelja	Predstavljanje prostora u parternom projektovanju	13th week	Presentation of space in landscape design
XIV nedjelja	Praktična implementacija prostornih vrijednosti Savremena realizacija i preporuke	14th week	The practice implemented spatial values Modern and implementation of recommendations
XV nedjelja	KOLOKVIJUM II	15th week	2nd TEST (colloquium)
XVI nedjelja	Završni ispit.	16th week	FINAL EXAM.
XVII nedjelja	Ovjera semestra i upis ocjena.	17th week	Verification of the semester and mark enrollment.
XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.	18th-21st week	Additional lessons and exam term.

Opterećenje studenata:

Nedjeljno

5.0 kredita x 40/30 = 6 sati i 40 minuta
struktura:

2 sata predavanja
2 sata vježbanja
2 sat i **40** min –samostalni rad, uključujući i konsultacije

U toku semestra

Nastava i završni ispit: (6 sati i 40 minuta) x 16 = **106 sati i 43 minuta**
Neophodne pripreme (administracija, upis, ovjera prije početka semestra): 2x (6 sati i 40 minuta)= **13 sati i 20 minuta**
Ukupno opterećenje za predmet : 5.0 x 30 = **150 sati**
Dopunski rad: preostalo vrijeme od prve dvije stavke do ukupnog opterećenja za predmet: 31 sat i 57 minuta
Struktura opterećenja: 106 sati i 43 min. (nastava) + 13 sati i 20 min. (prip.) + 21 sati i 57 min. (dop.r.)

Student workload:

Weekly

5.0 credits x 40/30 = 6 hours and 40 minutes
Structure:

2 hours of lectures
2 hour for tutorial
2 hours and **40** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (5 hours and 33 min) x 16 = **106 hours and 43 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (5 hours and 33 min) = **13 hours and 20 minutes**

Total hours for the course: 5.0x30 = **150 hours**
Additional hours: 31 hours and 57 minutes
Structure of workload: 106 h and 43 min (lectures)+ 13 h and 20 min (preparation) + 21 h and 57 min (add. hours)

Literatura / Literature:

- Macura V,Grad i urbanizovani predeo, Univerzitet u Beogradu, 1989.
- Cvejic J, Tipologija predjela, priprema predavanja, Beograd, 1999.
- Forman TTR & Godron M, Landscape Ecology, New York, 1986
- Vujkovic LJ, Pejzažna arhitektura, Planiranje i projektovanje, Univerzitet u Beogradu, 2003.
- Vujkovic LJ,Necak M,Vujicic D, Tehnika pejzažnog projektovanja, Univerzitet u Beogradu, 2003
- Jackle A.J., The visual Elements of Landscape, The University of Massachusetts
- Farr D, Sustainable Urbanism: Urban Design With Nature, 2010
- Barlow Rogers E, Landscape Design: A Cultural and Architectural History, 2001
- Jodidio P, Architecture Now! Landscape, 2009
- Ormsbee Simonds J, Earthscape: A Manual of Environmental Planning, 1978
- Treib M, Modern Landscape Architecture: A Critical Review, 1994

Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen)
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Završni ispit : maksimum 50 poena

** Prelazna ocjena se dobija ako student ostvari najmanje 51 poen.

Forms of Assessment:

* Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

** Passing grade is obtained if the student achieved at least 51 points.

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Parterna arhitektura:

Expected learning outcomes:

It is expected that the student after passing the exam parterre architecture:

1. Posjeduje adekvatno znanje i razumijevanje teorije i istorije parterne arhitekture
2. Posjeduje adekvatno znanje u procesu parternog dizajna
3. Implementira teorijska istraživanja u praksu
4. Razvija nove kriterijume i modele za savremene estetske i tehničke zahtjeve u parternom dizajnu

1. Has adequately skills and understanding of history and theory of Landscape architecture
2. Has adequate knowledge in process of landscape design
3. Implement theoretical research in practice
4. Develop new criteria and models for contemporary esthetic and technical requirements in landscape design

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).

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).

Napomena:

Vježbe iz ovog predmeta se odvijaju u studiju sa izradom dvaprojekta pejzažne arhitekture.
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

The exercises in this subject are taking place in the studio with creating two projects of the landscape architecture.
Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**INTEGRALNI ARHITEKTONSKI PROJEKAT (objekti saobraćaja i kompleksnih programa)**
Course title:	**INTEGRATED ARCHITECTURAL DESIGN (buildings of traffic and complex program)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
P_9.4.	**obavezan / required**	**IX**	**9.0**	**3P+4V**

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

Uslovljenost drugim predmetima:

Položeni ispiti: Specijalne konstrukcije i Arhitektonsko projektovanje 1-5.

Prerequisites:

Passed exams: Special Construction and the Architecture Design 1-5.

Ciljevi izučavanja predmeta:

Studenti ovladavaju osnovnim principima projektovanja, oblikovanja i programskih zahtjeva saobraćajnih terminala različitih vidova transportnih sistema. Kroz ciklus predavanja studenti se upoznaju sa istorijskim razvojem različitih vidova saobraćaja i posebno saobraćajnih temrinala, njihovom tipologijom i savremenim programskim i funkcionalnim zahtjevima.

Course aims:

Students taught the principles of design, shaping and program requirements of different types of terminal traffic transportation systems. Through the cycle of lectures, students are introduced to the historical development of different types of traffic, especially traffic terminals, their typology and the contemporary program and the functional requirements.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants

Doc. dr Veljko Radulovićdipl.ing.arh.

AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

Predavanja, vježbe, konsultacije, učenje i samostalna izrada semestralnih zadataka.

Teaching methods and learning activities:

Lectures, tutorials, consultations, teaching and the individual work on semester tasks.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Uvod, pregled razvoja saobraćajnih sredstava, razvoj saobraćaja u gradovima
II nedjelja	Objekti mirujućeg drumskog saobraćaja - urbanistički aspekti i lociranje, vozila, kretanje vozila, elementi puta i saobraćajne okretnice
III nedjelja	Vrste parkirališta i park – garaža, lociranje, funkcionalni i konstruktivni elementi, stajanke, rampe
IV nedjelja	Autobuski terminali – urbanistički aspekti i lociranje
V nedjelja	Autobuski terminali – vozila, funkcionalni i konstruktivni elementi i zahtjevi, oblikovanje
VI nedjelja	Željeznički saobraćaj – istorijski razvoj sistema, njegova urbanisitčki status i savremeni aspekti
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Željeznički terminali - urbanistički aspekti i lociranje, tipologija, šinska vozila i njihovo kretanje
IX nedjelja	Željeznički terminali - funkcionalni i konstruktivni elementi i zahtjevi, oblikovanje
X nedjelja	Vazdušni saobraćaj - istorijski razvoj i značaj, klasifikacije i urbanistički spekt
XI nedjelja	Aerodromi - lociranje, sletne staze, manevarske površine, klasifikacije
XII nedjelja	Aerodromski terminali - funkcionalni i konstruktivni elementi i zahtjevi, oblikovanje
XIII nedjelja	Terminali pomorskog saobraćaja – putničke luke i „Interchange“ čvorišta
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit – Predaja idejnog projekta
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction, overview of the development of transport equipment, development of transportation in cities
2nd week	Stationary objects road transportation - urban aspects and locating, vehicles, vehicle movement, elements of the road and traffic turntable
3rd week	Types of parking and the park - garage, location, functional and structural elements, aprons, ramps
4th week	Bus terminals - urban aspects and locating
5th week	Bus terminals - vehicles, functional and structural elements and requirements, design
6th week	Train service - the historical development of the system, its urban status and modern aspects
7th week	1st TEST (colloquium)
8th week	Railway terminals - urban aspects and locating, typology, rolling stock and track
9th week	Railway terminals - functional and structural elements and requirements, design
10th week	Air traffic - historical development and significance, classification and zoning aspect
11th week	Airports - location, runway, maneuvering areas, classification
12th week	Airport terminals - functional and structural elements and requirements, design
13th week	Terminals maritime transportation - passenger ferry and the "Interchange" nodes
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM - Submission of preliminary design
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno

9.0 kredita x 40/30 = 12 sati
Struktura: 3 sata predavanja
4 sata računskih vježbi
5 sato samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

Ukupno opterećenje za predmet: 9.0x30 = **270 sati**
Dopunski rad: **54 sata**
Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

Student workload:

Weekly

9.0 credits x 40/30 = 12 hours
Structure: 3 hours of lectures
4 hour for tutorial
5 hours of individual work, including consultations

During the semester

Teaching and the final exam: (12 hours) x 16 = **192 hours** **Necessary preparations** before the start of the semester (administration, registration, certification) 2 x (12 hours) = **24 hours**
Total hours for the course: 9.0x30 = **270 hours**
Additional hours: 54 hours
Structure of workload: 192 h (lectures)+ 24 h (preparation) + 54 h (add. hours) = 270 h

Literatura / Literature:

- Jean PaulRodrigue, Claude Comtois, Brian Slack .The geography of transport systems, (London: Routledge 2009)
- Fejzić, Emir. Suvremeni željeznički putnički terminali (Trilogija Železnice 1-3), (Beograd : Gradevinska knjiga, 2007)
- Ross, Julian, Eds. Railway Stations: Planning, Design and Management, (Oxford: Architectural Press, 2001)
- Adamović, Milan. Uvod u saobraćaj I, (Beograd: Saobraćajni fakultet, 2003)
- Maletin. Saobracajnice (Novi Sad)
- Pascoe,David. Airspaces , (London: Reaktion Books Ltd, 2001)

- Francisco Asensio Cerver The Architecture of Station and Terminals, (New York: Whitney Library of Design, 1997).

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.
- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

** Prelazna ocjena se dobija sa najmanje 60 poena.

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.
- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

** Passing grade is obtained with at least 60 points.

Očekivani ishodi učenja:

Očekuje se da će student, nakon položenog ispita Arhitektonsko projektovanje 7 biti sposoban da:
1. Izradi arhitektonski projekat ključnih djelova putničkih terminala za različite vidove saobraćaja;
2. Poznaje osnovne elemente i međusobne veze saobraćajnih sistema i pripadajućih arhitektonskih objekata, i shodno tome da izvrši njihovu urbanističku postavku;
3. Da izvrši prostorno-funkcionalnu i oblikovno-estetsku analizu ocjenu putničkih terminala i donese sud o njihovom kvalitetu.

Expected learning outcomes:

It is expected that the student after passing the exam Architectural Design 7 will be able to:
1. Creates architectural design key parts of the passenger terminal for different modes of transport;
2. Has knowledge the basic elements and interconnections of transport systems and related architectural structures, and consequently to carry out their urban setting;
3. To make the space-functional and design-aesthetic analysis of the assessment of passenger terminals and make judgments about their quality.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika.

Admonishment:

Further information about the subject can be obtained from the course lecturer.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**ARHITEKTONSKA / URBANISTIČKA RADIONICA**
Course title:	**ARCHITECTURAL / URBAN PLANNING WORKSHOP**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
P/U_9.5.	**obavezan / required**	**IX**	**3.0**	**1P+1V**

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

Uslovljenost drugim predmetima:

Studenti mogu da polažu predmet u bilo kom trenutku tokom studija; uslov nisu položeni ispiti.

Prerequisites:

Students can join the course at any time during their study; passed exams are not a condition.

Ciljevi izučavanja predmeta:

Cilj pripreme i sprovođenja radionice je da se uvede pristup istraživanja sa različitim stručnim pitanjima. Primjena ovog oblika radionice omogućava testiranje novih obrazovnih metoda, upoznavanje sa aktuelnim kretanjima u profesionalnoj praksi i internacionalne razmjene studenata i nastavnog kadra.

Course aims:

The goal of preparing and conduction workshops is to introduce the research approach to various professional issues. The applied form of workshop enables testing of new education methods, acquainting with ongoing trends in professional practise and international exchange of tutors and students.

Predmetni nastavnik – Lecturer /
Saradnici u nastavi – Teaching assistants

Prof. dr Dušan Vuksanović, Prof.dr Goran Radović, Prof.dr Ratko Mitrović , Doc.dr sc Svetislav G. Popović, Prof. dr Ilija Lalošević, Prof.dr Rifat Alihodžić, Doc.dr Dragan Komatina, Doc. dr Veljko Radulović, Doc. dr Slavica Stamatović Vučković, Doc. dr Svetlana Perović

AF _ 12 saradnika

Metode nastave i savladavanje gradiva:

Istraživački pristup, interdisciplinarni rad, timski rad, rad na terenu.

Teaching methods and learning activities:

Research approach, interdisciplinary work, teamwork, fieldwork.

SADRŽAJ PREDMETA:

Sadržaji radionica mogu biti veoma različiti: arhitektonski, urbanistički ili projektantski.
Svrha organiziranja radionica je razmjena različitih znanja, iskustava i stavovova o pojedinim stručnim pitanjima, a na ovaj način, kritički osvrt na struku, da se omogući studentima razvoj individualnih profesionalnih osobnosti. Studenti treba da dobiju poređenje između različitih metodologija rada na aplikativnom nivou, donose zaključake i kreativne sinteze specifičnim izrazima mentora ili grupe mentora, koje pomažu studentu u razvija njegovog / njenog projekta.
Organizacija i vođenje radionica su uglavnom prilagođene programskim koncepcijama zadatka, koji nose u sebi ciljeve i selekciju učesnika
Uslovni (urbani dizajn) raspored radionice:
Dan 1: Predstavljanja pitanja, gostujući predavači, definisanje problema, izlazak na teren.
Dan 2: Rad u grupama.
Dan 3: Rad u grupama, preliminarne prezentacije.
Dan 4: Rad u grupama.
Dan 5: Rad u grupama, Završna prezentacija.

SUBJECT CONTENT:

The contents of the workshops can be very different: architectural, urbanistic or design. The purpose of organizing workshops is to join various knowledge, experiences and attitudes about professional issues and in this manner, by critical reflection on the profession, to enable students development of their own professional personalities.Students are provided a comparison between different work methodologies on an applicative basis and conclusions by creative synthesis and specific expressions of mentors or mentor groups that help the student develop his/her project.
The organisation and conduct of workshops are generally adapted to the programme concept of the task, its inherent goals and selection of participants.
Tentative (urban design) workshop schedule:
Day 1: Presenting the issues, invited speakers, defining the problems, field survey.
Day 2: Group work.
Day 3: Group work, first intermediate presentation.
Day 4: Group work.
Day 5: Group work, final presentation.

Opterećenje studenata:

Nedjeljno
3.0 kredita x 40/30 = 4 sata
Struktura:
1 sata predavanja
1 sat vježbi
1 sat samostalnog rada, uključujući konsultacije

U toku semestra
Nastava i završni ispit: 4 sata x 16 = 64 sata
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x 4 sata = 8 sati
Ukupno opterećenje za predmet 3.0 x 30 = 90 sati
Dopunski rad : **18 sati**
Struktura opterećenja:
64sata (Nastava)+ 8 sati (Priprema)+ 18 sati. (Dopunski rad)

Student workload:

Weekly
3.0 credits x 40/30 = 4 hours
Structure:
1 hours of lectures
1 hour for tutorial
1 hour solo work, including consultations

During the semester
Teaching and the final exam:(4 hours) x 16 =64 hours
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (4 hours) = **8 hours**
Total hours for the course:3.0x30 = **90 hours**
Additional hours: 18 hours
Structure of workload:
64 h (lectures)+ 8 h(preparation) + 18 h(add. hours) =90 hours

Literatura / Literature:

- Analiza urbanog i arhitektonskog koncepta Paštrovačkih naselja;
- Istraživačka radionica u Virpazaru – Urbani apspekt Virpazara u kontekstu razvoja;
- Istraživačka radionica u Pivi – Analiza Ruralne arhitekture;
- Istraživačka radionica na Skadarskom jezeru u Murićima – Analiza razvojnih mogućnosti naselja;
- Istraživačka radionica u Igalu – Analiza razvojnih mogućnosti prostora Instituta dr Simo Milošević u Igalu;
- Istraživačka radionica u Tivtu – Valorizacija ostrva Sveti Marko;
- Ekološki *placemaking* Plav;

- Aktiviranje potencijala mjesta i eko-urbani izazovi - ,,Eco city Šavnik";
- BEAUTIFUL CETINJE International Architectural Workshop ,,Vrtijeljka 2012.";
- Nekada i sada -Principi i naslijeđe Ulmske škole dizajna;
- Cetinje/Bajice - grad u poljima (Internacionalna radionica fondacije Petrović Njegoš)

*Literatura je dostopna u biblioteci FA Podgorica / Study literature is available in the libraries FA in Podgorica

Oblici provjere znanja i ocjenjivanje:

Projektni zadatak (70% ocjene), javna prezentacija (30% ocjene).

Ocjena je uslovljena javnom izložbom i javnim prezentacijama projekta koji je pregledan od strane pozvanih kritičara. Ocjenu daje mentora i pozvani kritičar prema važećoj skali ocjenjivanja: 51-60% prosječan (6), 61-70% dobar (7), 71-80% vrlo dobar (8), 81-90% vrlo dobar (9), 91-100% odličan (10).

Forms of Assessment:

Project assignment (70% of the grade), public presentation (30% of the grade).
The grade is conditioned by the public exhibition and public presentation of the project reviewed by invited critics. The grade is given by mentors and invited critics according to the valid grading scale: 51-60 %- passable (6), 61-70 %-good (7), 71-80 %-very good (8), 81-90 %-very good (9), 91-100 %-excellent (10).

Očekivani ishodi učenja:

Očekuje se da će studenti nakon položenog ispita Arhitektonska radionica 1 imati znanja o:
1. Praktičnoj primjeni teorijskih saznanja;
2. Primjeni obrazovnih metoda i upoznavanju sa aktuelnim kretanjima u profesionalnoj domaćoj ili inostranoj praksi;
3. Kritičkom osvrtu na struku;
4. O timskom radu na konkretnom zadatku.

Expected learning outcomes:

It is expected that the students after passing the exam Architectural Workshop 1 will have knowledge of:
1. The practical application of theoretical knowledge;
2. Apply educational methods and learning about current developments in professional practice, domestic or foreign;
3. The critical review of the profession;
4. The team work on a specific task.

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).

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).

Napomena:

Znanje i razumijevanje
Deklarativno znanje. Razumijevanje fenomena, prostorne strukture, prostornih procesa, osjetljivost na pitanja, izvorni pristupi.
Korišćenja
Korištenje modela u pojedinim slučajevima, traženje veza između principa i prakse i prostornim uslovima.
Razmišljanja (odraz)
Kritička evaluacija harmonije između teorijskih principa i dizajna, kao i prostorni razvoj.
Edukativne vještine - nisu vezane za jednu temu
Timski rad, kritička analiza, problem identifikacije i rješavanja, sinteza.
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika i kod prodekana za nastavu.

Admonishment:

Knowledge and understanding
Declarative knowledge. Understanding phenomena, spatial structures, spatial processes, sensitivity to issues, original approaches.
Usage
Use of models in particular cases, search for ties between principles and practise and spatial conditions.
Reflection
Critical evaluation of harmony between theoretical principles and design, as well as spatial development.
Transferable skills – not tied to single subject
Teamwork, critical analysis, issue identification and solving, synthesis.
Further information about the subject can be obtained from the course teacher and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**OSNOVI METODOLOGIJA NAUČNOG ISTRAŽIVANJA**
Course title:	**BASICS OF METHODOLOGY OF SCIENTIFIC RESEARCH**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
P/U_9.7.1.	**izborni / elective**	**IX**	**2.0**	**2P+0V**

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

Uslovljenost drugim predmetima:

Nema uslovljenost.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa osnovnim metodama i postupkom izrade naučnoistraživačkog rada, metodama i postupkom naučnoistraživačkog rada projekta i plana, kao i njihovim tehničkom obradom.

Course aims:

Students are introduced to the basic methods and procedure of preparing of scientific research, methods and procedures of scientific research projects and plans, as well as their technical processing.

Predmetni nastavnik – saradnici u nastavi /
Lecturer – teaching assistants

/

Metode nastave i savladavanje gradiva:

Predavanja, vježbe i konsultacije. Seminarski rad.

Teaching methods and learning activities:

Lectures, tutorial and consultations.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Osnovna svojstva naučnoistraživačkog rada i metoda.
II nedjelja	Metodološki postupak naučnog istraživanja: izbor i formulacija problema istraživanja, cilj istraživanja, razrada sistema hipoteza.
III nedjelja	Metodološki postupak naučnog istraživanja: određivanje i definisanje predmeta i metoda istraživanja, periodizacija istraživačkog procesa i finansijska kalkulacija.
.IV nedjelja	Traganje za dokumentacijom.
V nedjelja	Prikupljanje građe.
VI nedjelja	Organizacija i raspored prikupljene građe
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Naučno objašnjenje otkrivenih činjenica.
IX nedjelja	Način pisanja naučnog rada.
X nedjelja	Vrste uzoraka.
XI nedjelja	Metodološki postupak i metode istraživanja projekta.
XII nedjelja	Metodološki postupak i metode istraživanja plana.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Fundamental properties of scientific research and methods.
2nd week	Methodological approach of scientific research: the selection and formulation of research problems, the aim of research, development of hypothesis systems.
3rd week	Methodological approach of scientific research: identifying and defining the subject and methods of research, periodization of the research process and financial calculations.
4th week	The search for documentation.
5th week	Collecting of the material.
6th week	The organization and layout of the collected material.
7th week	1st TEST (colloquium)
8th week	Scientific explanation of discovered facts.
9th week	Method of writing scientific papers.
10th week	Sample types.
11th week	Methodological approach and research methods of the project.
12th week	Methodological approach and methods of research plan.

XIII nedjelja	Tehnička obrada i štampanje naučnog djela, istraživačkog projekta i plana.
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	Dopunska nastava i popravni ispitni rok.
XVIII-XXI nedjelja	

13th week	Technical processing and printing of scientific works, research projects and plans.
14th week	2nd TEST (colloquium)
15th week	FINAL EXAM.
16th week	Verification of the semester and mark enrollment.
17th week	Additional lessons and exam term.
18th-21st week	

Opterećenje studenata:

Nedjeljno
2.0 kredita x 40/30 = 3 sata i 6 minuta
Struktura: 2 sata predavanja
1 sat i **6** minuta samostalnog rada, uključujući konsultacije

U toku semestra
Nastava i završni ispit: (3 sata i 6 min) x 16 = **49 sati i 36 min**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (3 sata i 6 minuta) = **6 sati i 12 minuta**

Ukupno opterećenje za predmet 2.0x30 =**60 sati**

Dopunski rad: **4 sata i 12 minuta**
Struktura opterećenja: 49 sati i 36 min. (Nastava) + 6 sati i 12 min. (Priprema) +4 sata i 12 min. (Dopunski rad) = 60 sati

Student workload:

Weekly
2.0 credits x 40/30 = 3 hours and 6 minutes
Structure: 2 hours of lectures
1 hours and **6** minutes of individual work, including consultations

During the semester
Teaching and the final exam: (3 hours and 6 min) x 16 = **49 hours and 36 minutes**
Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **6 hours and 12 minutes**
Total hours for the course: 62.0x30 = **60 hours**
Additional hours: 4 hours and 12 minutes
Structure of workload: 49 hours and 36 min (lectures) + 6 hours and 12 min (preparation) + 4 hours and 12 min (Additional hours) = 60 hours

Literatura / Literature:

- Miroslav Živković, Uvod u metodologiju naučnog istraživanja, AF u Beogradu, 1977.
- Dr Mithat Šamić, Kako nastaje naučno djelo, Svjetlost, Sarajevo, 1990.
- Milan Mole, Uvod u naučnu i stručnu dokumentaciju, AF u Beogradu, 1979.
- Dr Zoran V. Popović, Kako napisati i objaviti naučno djelo, Institut za fiziku, Beograd, 2004.
- Dr Goran Radović, Metodologija naučnoistraživačkog rada, Skripta, Arhitektonski fakultet Podgorica, 2010

Oblici provjere znanja i ocjenjivanje:

- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Završni ispit : maksimum 50 poena

Forms of Assessment:

- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Final exam: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Metodologija naučnog istraživanja:
1. Posjeduje znanja o osnovnim metodama i postupku izrade naučno-istraživačkog rada, kao i njegovoj tehničkoj obradi.

Expected learning outcomes:

It is expected that the student, after passing the examination methodology of scientific research:
1. Has knowledge about the basic methods and the process of developing scientific research and its technical processing.

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).

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**OSNOVI TERMALNE NAUKE I METODOLOGIJA OBRAČUNA ENERGETSKIH PERFORMANSI OBJEKTA**
Course title:	**BASICS OF THERMAL SCIENCE AND METHODOLOGY OF CALCULATION OF OBJECT ENERGY PERFORMANCE**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
P_9.7.3.	**izborni / elective**	**IX**	**2.0**	**2P+0V+0L**

Studijski program:	ARHITEKTURA. Akademske studije sa integrisanim masterom. Dužina trajanja: 10 semestara i 300 kredita.
Study programme:	ARCHITECTURE. Academic studies with the integrated Master. Duration: 10 semesters and 300 credits.

Uslovljenost drugim predmetima:

Nema uslovljenost.

Prerequisites:

No prerequisites.

Ciljevi izučavanja predmeta:

Studenti se upoznaju sa principima nauke o toploti, mehanizmima transfera toplote, zakonima i pojmovima iz oblast transfera energije u zgradama, vrstama KGH instalacija u zgradama i upotrebom obnovljivih izvora energije u KGH instalacijama. Poseban osvrt dat je na pristupe u proračunu potrebnog kapaciteta KGH sistema u režimu grijanja i u režimu hlađenja, na aspekt klimatskih uslova, te na razumijevanje pojmova toplotnih gubitaka/dobitaka i toplotnog opterećenja. Kroz računske primjere i lab.praksu obrađeni su karakteristični primjeri, u cilju fizičkog upoznavanja sa KGH sistemima, savremenim rešenjima, i sticanja osjećaja za uticaj karakteristika objekta, zadatih klimatskih uslova i primijenjenih KGH rešenja - na ukupne EE performanse projektovanog objekta.

Course aims:

Students are introduced into thermal science principles, hea transfer mechanisms, laws and terms related to the energy transfe in buildings, types of HVAC installations in buildings and use o renewable energy sources in HVAC. Special attention is given to th approaches in calculating the required HVAC system capacity, i heating and in cooling regime, to the climatic conditions aspect, an the understanding of the terms of heat gains/losses and heat loads Trough calculated examples and laboratory praxis caracteristi examples are treated, with the scope of familiarizing students wit the HVAC installations, modern solutions, and the gain of feel for the influence of building design properties, climatic conditions input and the applied HVAC solutions - to the overall EE performance o the designed building.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Prof. dr Dušan Vuksanović
	/

Metode nastave i savladavanje gradiva:

Predavanja, vježbe i konsultacije.

Teaching methods and learning activities:

Lectures, tutorial and consultations.

SADRŽAJ PREDMETA:

Pripremna nedjelja	Priprema i upis semestra
I nedjelja	Uvod u fiziku toplote. Pritisak, temperatura, vlažnost, gustina
II nedjelja	Stanje gasa, dijagrami (idealni gas, vazduh, Molier, p-h, relativna i apsolutna vlažnost)
III nedjelja	Kinetička, potencijalna, unutrašnja energija, toplota, rad, entalpija
IV nedjelja	I zakon termodinamike za otvoren sistem. II zakon: neravnoteža, potencijal, entropija, definicije efikasnosti, eksergija.
V nedjelja	Prenos toplote: kondukcija, konvekcija, prolaz.

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Introduction to thermal science. Pressure, temperature, humidity, density
2nd week	State of gas, diagrams (ideal gas, air, Molier, p-h relativne and absolute humidity)
3rd week	Kinetic, potential, internal energy, heat, work, enthalpy
4th week	I law of thermodynamics for open systems. II law: non-equilibrium, potential, entrophy, definitions of efficiency, exergy
5th week	Heat transfer: conduction, convection,

			transmission.
VI nedjelja	Prenos toplote: IC zračenje. Bilans toplote.	6th week	Heat transfer: IR radiation. Heat balance.
VII nedjelja	KOLOKVIJUM I	7th week	1st TEST (colloquium)
VIII nedjelja	Osvetljenje: lumen, lux. Efikasnost, klasične i efikasne svjetiljke.	8thweek	Lighting system: lumen, lux. Efficiency, classic and efficient light bulbs.
IX nedjelja	KGH instalacije - tipovi; provjetravanje; savremena rešenja; upotreba obnovljivih izvora;	9th week	HVAC installations - types; ventilation; use of renewable energy;
X nedjelja	KGH instalacije - režim grijanja: stepen dan; projektni dan; primarna energija goriva; efikasnosti i potrebna primarna energija; indikatori EE performanse objekta.	10th week	HVAC installations - degree day; primary energy of the fuel; efficiency factors and energy use; EE indicators of the building
XI nedjelja	KGH instalacije - režim hlađenja: sunce i građevinski objekat; toptlotni dobici/gubici i toplotno opterećenje - uzajamni odnos; projektni dan;	11th week	HVAC instalations - cooling regime. Sun and the building. Heat gains/losse and heat load - interelations; design day
XII nedjelja	Praksa / teren / laboratorija	12th week	Praxis / field examples / Lab
XIII nedjelja	Računski primjeri	13th week	Calculated examples
XIV nedjelja	Računski primjeri	14th week	Calculated examples
XV nedjelja	II kolokvijum.	15thweek	2nd TEST (colloquium)
XVI nedjelja	*Završni ispit*	16thweek	FINAL EXAM.
XVII nedjelja	Ovjera semestra i upis ocjena.	17th week	Verification of the semester and mark enrollment.
XVIII-XXI nedjelja	Dopunaska nastava i popravni ispitni rok.	18th-21st week	Additional lessons and exam term.

Opterećenje studenata:

Nedjeljno

2.0 kredita x 40/30 = 3 sata i 6 minuta

Struktura: 2 sata predavanja

1 sat i **6** minuta samostalnog rada, uključujući konsultacije

U toku semestra

Nastava i završni ispit: (3 sata i 6 min) x 16 = **49 sati i 36 min**

Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (3 sata i 6 minuta) = **6 sati i 12 minuta**

Ukupno opterećenje za predmet 2.0x30 =**60 sati**

Dopunski rad: **4 sata i 12 minuta**

Struktura opterećenja: 49 sati i 36 min. (Nastava) + 6 sati i 12 min. (Priprema) +4 sata i 12 min. (Dopunski rad) = 60 sati

Student workload:

Weekly

2.0 credits x 40/30 = 3 hours and 6 minutes

Structure: 2 hours of lectures

1 hours and **6** minutes of individual work, including consultations

During the semester

Teaching and the final exam: (3 hours and 6 min) x 16 = **49 hours and 36 minutes**

Necessary preparations before the start of the semester (administration, registration, certification) 2 x (8 hours) = **6 hours and 12 minutes**

Total hours for the course: 62.0x30 = **60 hours**

Additional hours: 4 hours and 12 minutes

Structure of workload: 49 hours and 36 min (lectures) + 6 hours and 12 min (preparation) + 4 hours and 12 min (Additional hours) = 60 hours

Literatura / Literature:

- Kažić N., Vuksanović D. Energetska efikasnost zgrada - priručnik. *Univerzitet Crne Gore, Podgorica, 2012.*
- Odabrana poglavlja iz: Todorović, B.:Centralno grejanje, Todorović B: Klimatizacija. *Mašinski fakultet u Beogradu*
- Odabrana poglavlja iz: Kimura, K, Scientific Basis of Air Conditioning. Applied Science Publishers Ltd,Essex, England. Architectural Science Series, 1977.
- Skripta

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.

- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Završni ispit : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.

- Regular attendance of classes: 10 points (each one less causefailure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Final exam: maximum 50 points

Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Osnovi nauke o toploti, kgh instalacije i efikasnost:

1. Poznaje osnovne principe nauke o toploti, mehanizmima transfera toplote, zakonima i pojmovima iz oblast transfera energije u zgradama, vrstama KGH instalacija u zgradama i upotrebom obnovljivih izvora energije u KGH instalacijama;
2. Razumije uticaje arhitektonskog objekta na životnu sredinu.

Expected learning outcomes:

It is expected that the student after passing the exam Basics of Science on Heat, HVAC installations and efficiency:

1. Knows basic principles of the science of heat, heat transfer mechanisms, laws and concepts in the field of energy transfer in buildings, types of HVAC installations in buildings and use of renewable energy sources in HVAC installations;
2. Understands influences architectural structure on the environment.

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).

Napomena:

Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

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).

Admonishment:

Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.

nastavnika, šefa studijskog programa i kod prodekana za nastavu.	course teacher, Head of the study programme and Vice Dean for Education.

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Naziv predmeta:	**INTEGRALNI PROJECT (planiranje i projektovanje kompleksnih programa)**
Course title:	**INTEGRAL PROJECT (planning and design of complex programs)**

Šifra predmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
9.4.	**obavezan / required**	**IX**	**9.0**	**3P+4V**

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

Uslovljenost drugim predmetima:

Uslovljenost srodnim predmetima.

Prerequisites:

Prerequisites with similar subjects.

Ciljevi izučavanja predmeta:

Zadatak nastave je ovladavanje integralnim znanjima iz oblasti urbanističkog i prostornog planiranja i projektovanja i urbane regeneracije u kontekstu održivog razvoja. Upoznavanje sa integralnim metodama i tehnikama u stvaranju specifičnih modela kroz istraživanja i praktičan rad na kompleksnim projektima .

Course aims:

The task of teaching is to have a integral knowledge in the field of urban and spatial planning and design and urban regeneration in the context f sustainable development. Introduction into integral methods and techniques in the creation of specific models through research and practical work on complexity projects.

Predmetni nastavnik – saradnici u nastavi / Lecturer – teaching assistants	Doc.dr Svetlana K. Perović
	AF _ 3 saradnika

Metode nastave i savladavanje gradiva:

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	Savremeni urbani fenomen
II nedjelja	Održiva urbana regeneracija
III nedjelja	Savremeni urbani koncepti
IV nedjelja	Metodologija urbanističkog projektovanja_ Održivi pristupi u urbanom dizajnu i urbanoj regeneraciji
V nedjelja	Metode i tehnike istraživanja i kvantifikacije
VI nedjelja	Integralni urbanizam_principi i kriterikumi primjene
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Integralne metode istraživanja u urbanističkom projektovanju : Inter/Transdisciplinarna analiza
IX nedjelja	Integralne metode istraživanja u urbanističkom

SUBJECT CONTENT:

Preliminary week	Preparation and enrollment of semester.
1st week	Contemporary urban fenomena
2nd week	Sustainable urban regeneration
3rd week	Contemporary urban concepts
4th week	Methodology of urban design Sustainable approach in an urban design and urba regeneration
5th week	Methods and techniques of research and quantification
6th week	Integral urbanism_principles and criteria for implementation
7th week	1st TEST (colloquium)
8th week	Integrated methods of research in an urban design Inter/Transdisciplinary approach in urban analysis
9th week	Integrated methods of research in an urban design Inter/Transdisciplinary approach in urban

				regeneration
	projektovanju : Inter/Transdisciplinarni pristup u urbanoj regeneraciji		10th week	Conception models: idealization, optimization, implementation.
X nedjelja	Modeli koncipiranja: idealizacija, optimalizacija, realizacija.		11th week	The concept of channeling development.
			12th week	The concept of selecting and stationing.
XI nedjelja	Koncept kanalisanja razvoja.		13th week	Inter/Trans disciplinary sustainable platform for urban research.
XII nedjelja	Koncept stacioniranja i selekcionisanja.			
XIII nedjelja	Inter/Transdisciplinarna održiva platforma za urbana istraživanja		14th week	2nd TEST (colloquium)
			15th week	FINAL EXAM
XIV nedjelja	KOLOKVIJUM II		16th week	Verification of the semester and mark enrollment
XV nedjelja	Završni ispit.		17th week	
XVI nedjelja	Ovjera semestra i upis ocjena.		18th-21st week	Additional lessons and exam term.
XVII nedjelja				
XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.			

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

Ukupno opterećenje za predmet: 9.0x30 = **270 sati**
Dopunski rad: **54 sata**
Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

U toku semestra

Nastava i završni ispit: (12 sati) x 16 = **192 sata**
Neophodne pripreme prije početka semestra (administracija, upis, ovjera) 2 x (12 sati) = **24 sata**

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Dopunski rad: **54 sata**
Struktura opterećenja: 192 sata (Nastava) + 24 sata (Priprema) + 54 sata (Dopunski rad) = 270 sati

Literatura / Literature:

- Ellin, N. Postmodern Urbanizm. Princeton Architectural Press, New York, 1999.
- Ellin, N. Integral Urbanizm, Routledge, Taylor & Francis Group, New York., 2006.
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- Perović, S. Transdisciplinary methodology of architectural and urban discourse in higher education. In Wang, Victor(ed.), Handbook of Research on Education and Technology in a Changing Society, IGI Global,2014.
- Doucet I., & Geneviève J. (Eds.). Transdisciplinary Knowledge Production in Architecture and Urbanism ,Towards Hybrid Modes of InquiryNew York: Springer,33-51. ,2011.
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- Kalen, G. Gradski pejzaž, Beograd: Građevinska knjiga,1990.
- Petrović, M. Transformacija gradova: ka depolitizaciji urbanog pitanja, Beograd: Institut za sociološka istraživanja Filozofskog fakulteta u Beogradu, 2009.
- Lefebvre, H. The Production of Space. Oxford: Blackwell Publishers, Ltd., 1995.
- Lefebvre, H. The urban revolution. Minesota: Univesity of Minesota Press, 2003.
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- Tošković, D.: Uvod u metode analize i sinteze u prostornom i urbanističkom planiranju, IAUS, Beograd, 1986.
- Stojkov, B.: Metode analize i sinteze u prostornom planiranju, IAUS, Beograd, 1992.
- Marinović-Uzelac A.: Teorija namjene površina, Tehnička knjiga, Zagreb, 1989.

Oblici provjere znanja i ocjenjivanje:

* Položena oba kolokvijuma i pozitivno ocjenjen sintezni projekat.

- Uredno pohađanje nastave : ukupno 10 poena (svaki izostanak manje 1 poen), maksimalno 3 izostanka
- I kolokvijum : maksimum 20 poena
- II kolokvijum : maksimum 20 poena
- Semestralni rad : maksimum 50 poena

Forms of Assessment:

* Student has to pass both tests and positively evaluated synthesis project.

- Regular attendance of classes: 10 points (each one less cause failure point), maximum 3 absences
- First test: maximum 20 points
- Second test: maximum 20 points
- Semester work: maximum 50 points

Očekivani ishodi učenja:

Nakon položenog ispita student će biti osposobljen da:

1. Razumije integralne metodologije, paradigme, modele urbanističkog projektovanja u savremenim uslovima , primjenjuje ih i razvija u rješavanju kompleksnih urbanističkih zadataka

2. Identifikuje specifične urbane fenomene i procese u konkretnom kontekstu

3. Posjeduje razvijen smisao za timski ,kreativni rad i kritičko

Expected learning outcomes:

After passing the exam, the student will be able to:

1. Understands integrated methodologies, paradigms, models of urban design in contemporary conditions, apply them and develop it resolving complex urban assignments

2. Identify specific urban phenomena and processes in concrete context

3. Has a good sense of teamwork, creative work and critical thinking

mišljenje u procesu planiranja i projektovanja kompleksnih urbanih projekata 3. Razvija nove integralne kriterijume i modele za savremene estetske i tehničke zahtjeve u kompleksnim urbanim zadacima 4.Adekvatno Interpretira rezultate istraživanja u skladu sa konkretnim zahtjevima	in the process of planning and design of complex urban projects 3. Develop new integrated criteria and models for contemporary esthetic and technical requirements in complex urban tasks 4. Adequately interpret the research results in accordance with concrete requirements

Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:	**Methods for assessing the quality and ensuring preferred learning outcomes:**
Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).	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).

Napomena:	**Admonishment:**
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.	Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.