The second study cycle

PROGRAMME/CURRICULUM
ECTS credit system

Sarajevo, 2024.

Contents:

About the study

The study of architecture at the Faculty of Architecture in Sarajevo is conducted in accordance with the Bologna principles as a full-time general course study. The study has been accorded with the European Credit Transfer System (ECTS).

TEACHING PROCESS IS ORGANISED IN THREE CYCLES (3+2+3)

The first three-year study cycle leads to the title ***Bakalaureat/bachelor Engineer of Architecture.***

The second two-year study cycle leads to the title ***Master of Architecture - Graduate of Architectural Engineering.***

The third three-year study cycle leads to the title ***Doctor of Technical Sciences in the Field of Architecture.***

The first three-year cycle confers **180** ECTS credits.

The second two-year study cycle confers **120** ECTS credits.

The third three-year study cycle confers **180** ECTS credits.

The teaching process is organised in semesters. At the end of the semester, a student receives the final grade for each subject, containing grades they earned in class for every subject, which includes grades the student earned in class, as well as grades earned at the final exam. Teaching that includes obligatory and elective subjects is conducted through lectures, practical classes, seminars and consultations.

Enrolment to each individual cycle is performed thorough a public competition, which defines the enrolment conditions and criteria.

The studying process outcome for the second study cycle is acquiring adequate knowledge, skills and competences, as well as a professional qualification that enables an individual and responsible practice of all business activities in the field of architecture and urbanism, as well as enrolment to the third cycle of architecture and urbanism study, provided that the required conditions are fulfilled.

Organisation of the faculty

Organisational units of the faculty are departments. Teaching, scientific research and professional activities of the faculty are conducted within departments. Departments contain congenial subjects in the sole competence of the specialised scientific disciplines.

Departments

Departments are organisational units for teaching, scientific-research and professional activities. Department members are professors and associates engaged in subjects of the department. The department is presided by head of the department appointed by the scientific and teaching council for the period of four years.

Main tasks of the department are:

- to organise and conduct teaching process and scientific-research activities in accordance with the curricula,
- to initiate guest lectures and study visits of both professors and associates,
- to propose measures of fulfilling vacancies,
- to provide opinion on the leave of professors and associates and to organise substitutes,
- to provide for other affairs related to teaching, scientific-research activities, as well as professional development of professors and associates.

Departments that encompass subjects in the sole competence of the Faculty of Architecture are:

01.01.00	DEPARTMENT FOR SPATIAL AND GRAPHICAL VISUALISATION
01.02.00	DEPARTMENT FOR THEORY AND HISTORY OF ARCHITECTURE AND PROTECTION OF ARCHITECTURAL HERITAGE
01.03.00	DEPARTMENT FOR ARCHITECTURAL DESIGN
01.04.00	DEPARTMENT FOR URBANISM AND SPATIAL PLANNING
01.05.00	DEPARTMENT FOR ARCHITECTURAL STRUCTURES AND BUILDING TECHNOLOGY
01.07.00	GENERAL STUDIES

An overview of subjects through semesters

The structure of the study of architecture at the Faculty of Architecture in Sarajevo consists of obligatory and elective subjects. Elective graduate modules are distributed in the third semester of the second study cycle of architecture.

The second study cycle – Master

1st SEMESTER

CODE OF THE SUBJECT	NAME OF THE SUBJECT	CONTACT HOURS (L+PC)	ECTS
01.03.19	INTERIOR ARCHITECTURE AND DESIGN 2	1(1+0)	3
01.06.23	LOAD-BEARING STRUCTURES	4(2+2)	4
01.03.11	ARCHITECTURAL DESIGN 7	2(1+1)	3
01.03.13	ARCHITECTURAL DESIGN 9	5(2+3)	6
01.04.09	SPATIAL PLANNING	2(2+0)	2
01.04.04	URBAN DESIGN 4	2(1+1)	3
01.02.08	PRESERVATION OF ARCHITECTURAL HERITAGE	2(1+1)	3
	ELECTIVE COURSES		6

1ST SEMESTER – ELECTIVE COURSES

CODE OF THE SUBJECT	*ELECTIVE COURSES	CONTACT HOURS (L + PC)	ECTS
01.04.10	CITY CENTRES	3(1+2)	3
01.04.15	MACRO-URBAN AREAS	3(1+2)	3
01.03.30	PRESCHOOL BUILDINGS	3(1+2)	3
01.03.47	PROBLEMS OF MODERNITY OF SINGLE-FAMILY HOUSES	6(2+4)	6
01.03.46	DESIGNING TOURISM AND HOSPITALITY FACILITIES	6(2+4)	6
01.04.37	SPATIAL ORGANISATION OF THE CITY – A CONCEPT	3(1+2)	3
01.01.22	DEVELOPMENT OF ART ELEMENTS THROUGH REALISTIC AND ABSTRACT EXPRESS THROUGH DRAWINGS AND IMAGES	2(1+1)	3
01.04.21	REDESIGNING URBAN GROUND FLOOR, OPEN CITY SPACES – CITY ARCHITECTURE	3(1+2)	3
01.03.51	CONTEMPORARY SPATIAL CONCEPTS, DESIGN AND PROTOTYPE	6(3+3)	6
01.02.25	VERNACULAR ARCHITECTURE	2(1+1)	3
01.04.43	THE 21ST CENTURY CITY	3(1+2)	3
01.03.64	ARCHITECTURE AND HEALTH 1	2(1+1)	3

2ND SEMESTER

CODE OF THE SUBJECT	NAME OF THE SUBJECT	CONTACT HOURS (L + PC)	ECTS
01.03.20	INTERIOR ARCHITECTURE AND DESIGN 3	3(1+2)	3
01.02.10	HISTORY OF ARCHITECTURE IN BOSNIA AND HERZEGOVINA	2(2+0)	2
01.02.09	METHODOLOGY AND PHENOMENOLOGY OF AN ACTIVE APPROACH TO ARCHITECTURAL HERITAGE	4(2+2)	5
01.03.14	ARCHITECTURAL DESIGN 10 – AGRICULTURAL BUILDINGS	2(1+1)	2
01.04.07	URBAN TRANSFORMATIONS	1(1+0)	2
01.04.11	URBAN PLANNING 2	2(2+0)	1
01.04.05	URBAN DESIGN 5	4(1+3)	6
	ELECTIVE COURSES		9

2ND SEMESTER – ELECTIVE COURSES

CODE OF THE SUBJECTS	*ELECTIVE COURSES	CONTACT HOURS (L + PC)	ECTS
01.01.16	ABSTRACT VISUAL EXPRESSION OF SHAPES, COLOURS AND MOVEMENT	2(1+1)	3
01.04.33	ARTIFICIAL LIGHTING AND URBAN ENVIRONMENT	2(1+1)	3
01.05.18	BIOCLIMATIC ARCHITECTURE	2(2+0)	3
01.05.39	MANAGEMENT AND PROGRAMMING OF ARCHITECTURAL PROJECTS	2(2+0)	3
01.03.31	SPECIAL ARCHITECTURAL PROJECTS	6(2+4)	6
01.03.29	SPECIFIC HOUSING AREAS	2(2+0)	3
01.05.21	CONSTRUCTION PROJECT MANAGEMENT	3(1+2)	3
01.06.12	COMPOSITE AND PRESTRESSED STRUCTURES	2(1+1)	3
01.04.42	TRANSFORMATION OF URBAN ANSAMBLE	4(1+3)	6
01.04.14	URBAN TRANSFORMATIONS FOR THE 21st CENTURY	3(1+2)	3
01.03.58	CULTURAL FACILITIES 1	6(2+4)	6
01.03.27	HEALTHCARE FACILITIES	6(2+4)	6
01.06.18	MASONRY STRUCTURES	3(2+1)	3
01.01.25	VIRTUAL INTERACTIVE ARCHITECTURAL SPACE	3(1+2)	3
01.03.65	ARCHITECTURE AND HEALTH 2	6 (2+4)	6
01.03.69	LIGHT IN DESIGN	2(1+1)	3
01.05.50	LIFE CYCLES OF THE BUILDING AND ITS ENVIRONMENTAL IMPACT	3(1+2)	3

3RD SEMESTER

CODE OF THE SUBJECT	NAME OF THE SUBJECT	CONTACT HOURS (L + PC)	ECTS
01.05.13	ARCHITECTURAL PHYSICS 2	1(1+0)	3
01.04.40	THE CITY AND MAN	2(2+0)	2
01.04.06	URBAN DESIGN 6	4(1+3)	6
	ELECTIVE MODULE	6(4+2)	10
	ELECTIVE COURSES		9

3RD SEMESTER – ELECTIVE MODULES

CODE OF THE SUBJECT	*ELECTIVE MODULES	CONTACT HOURS (L + P)	ECTS
01.03.54	ARCHITECTURAL COMPOSITIONAL REDEFINITION	6(4+2)	10
01.02.34	ARCHITECTURAL INTERVENTIONS IN A HISTORICAL URBAN CONTEXT	6(4+2)	10
01.03.41	SPECIAL PURPOSE ARCHITECTURE AND HOUSING	6(4+2)	10
01.05.40	ENVIRONMENTALLY SOUND DESIGN	6(4+2)	10
01.03.35	INTERIOR ARCHITECTURE AND DESIGN	6(4+2)	10
01.02.27	INTERVENTIONS IN AMBIENTAL FACILITIES – METHODS OF PROTECTION OF A BUILDING PLACE	6(4+2)	10
01.03.43	PUBLIC BUILDINGS	6(4+2)	10
01.05.34	KINETIC, INTERACTIVE ARCHITECTURE AND DESIGN	6(4+2)	10
01.01.23	COMPLEX DYNAMIC FORM AND VIRTUAL SPACE IN ARCHITECTURE	6(4+2)	10
01.03.55	KONCEPTUAL OPTIMIZATION OF CONTEMPORARY HOUSING	6(4+2)	10
01.03.56	CONTEXTUAL APPROACH IN INTERIOR DESIGN	6(4+2)	10
01.04.30	SUSTAINABLE URBANISM: CHALLENGES, TRANSFORMATIONS, SYMBOLS	6(4+2)	10
01.03.36	COMMERCIAL BUILDINGS	6(4+2)	10
01.05.25	DESIGNING BY THE PRINCIPLES OF BIOCLIMATIC ARCHITECTURE	6(4+2)	10
01.06.20	RECONSTRUCTION OF MASONRY STRUCTURES	6(4+2)	10
01.03.39	HOUSING OBJECTS WITHIN ARCHITECTURALLY-SPECIFIC URBAN ENVIRONMENT	6(4+2)	10
01.04.34	RECULTIVATION AND RECONSTRUCTION OF DEGRADED URBAN AREAS	6(4+2)	10
01.04.16	URBAN TRANSFORMATIONS	6(4+2)	10
01.04.26	URBAN PLANNING AND DESIGN	6(4+2)	10
01.04.41	URBAN AND SPATIAL PLANNING	6(4+2)	10
01.06.19	HIGH-RISE BUILDINGS IN ARCHITECTURE	6/4+2)	10
01.03.60	HOUSING REGENERATION OF THE XXth CENTURY RESIDENTAL SETTLEMENTS	6(4+2)	10
01.01.26	VISUALIZATION OF ARCHITECTURE-FROM IDEA TO REALIZATION	6(4+2)	10
01.03.63	SPATIAL CONCEPTS IN ARCHITECTURE AND ART IN CONTEMPORARY CULTURAL CONTEXT	6(4+2)	10
01.05.47	DESIGNING LOW ENERGY ARCHITECTURE	6(4+2)	10
01.06.27	PREFABRICATION OF LOAD-BEARING SYSTEMS	6(4+2)	10
01.05.48	ENVIRONMENTAL CONDITIONS OPTIMIZATION IN THE PROCESS OF ARCHITECTURAL HYBRIDIZATION	6(4+2)	10
01.05.49	BUILDING DESIGN IN ACCORDANCE WITH SUSTAINABLE DEVELOPMENT GOALS	6(4+2)	10
01.03.72	SOCIALLY RESPONSIBLE ARCHITECTURE - Innovative Approaches to Housing	6(4+2)	10

3RD SEMESTER – ELECTIVE COURSES

CODE OF THE SUBJECT	*ELECTIVE COURSES	CONTACT HOURS (L + P)	ECTS
01.05.15	ARCHITECTURE AS AN ENERGY SYSTEM	2(2+0)	3
01.02.39	DEFINING AMBIENTAL UNITS – THE OLD TOWN MUNICIPALITY (OTTOMAN PERIOD)	4(1+3)	6
01.05.41	BUILDINGS FINALISATION AND DETAILS	2(1+1)	3
01.04.36	ENVIRONMENT PHENOMENOLOGY	1(1+0)	3
01.03.40	COMMERCIAL BUILDINGS	6(2+4)	6
01.04.38	CONTEXTUALISM IN URBAN DESIGN – TRIAD CONSEQUENCES OF REDESIGN	3(1+2)	3
01.04.44	URBAN LANDSCAPE DESIGN	2(1+1)	3
01.03.53	PERSONS WITH PHYSICAL IMPAIRMENT AND ARCHITECTURAL BARRIERS	3(1+2)	3
01.04.35	THE DEVELOPMENT AXIS – THE SPATIAL-PLANNING THEORY	3(1+2)	3
01.06.13	FIRE RESISTANCE OF STRUCTURES	2(2+0)	3
01.04.45	RECREATION AND FREE TIME	3(1+2)	3
01.03.45	FAIRGROUNDS AND EXHIBITIONS	3(1+2)	3
01.03.17	TRAFFIC BUILDINGS	6(2+4)	6
01.04.39	TRANSFORMATION AND FUTURE ORGANISATION OF RURAL SETTLEMENTS	2(1+1)	3
01.06.24	HIGH-RISE BUILDINGS IN ARCHITECTURE	6(3+3)	9
01.03.59	CULTURAL FACILITIES 2	6(2+4)	6
01.02.31	ARCHITECTURAL INTERVENTIONS AT CULTURAL HERITAGE OBJECTS AND ENSEMBLES	2(1+1)	3
01.03.71	SPORT BUILDINGS	6(2+4)	6

4TH SEMESTER

CODE OF THE SUBJECT	NAME OF THE SUBJECT	CONTACT HOURS (L + PC)	ECTS
	ELECTIVE COURSES		9
01.08.01	MASTER'S THESIS		21

4TH SEMESTER – ELECTIVE COURSES

CODE OF THE SUBJECT	*ELECTIVE COURSES	CONTACT HOURS (L + PC)	ECTS
01.02.37	DEFINING AMBIENTAL UNITS – THE AUSTRO-HUNGARIAN PERIOD IN SARAJEVO	4(1+3)	6
01.04.19	ECOLOGICAL CONSEQUENCES OF URBAN ORGANISATION AND A SUSTAINABLE URBAN DEVELOPMENT	1(1+0)	3
01.03.25	HOUSE FORM AND CULTURE	1(1+0)	3
01.05.24	CONCEPTUALISATION AND MATERIALIZATION OF ARCHITECTURALLY DEFINED SPACE	2(2+0)	3
01.06.25	RECONSTRUCTION OF MASONRY STRUCTURES	6(3+3)	9
01.04.28	SPATIAL MANAGEMENT	2(2+0)	3
01.02.36	VISUAL CULTURE	2(1+1)	3
01.03.67	ARCHITECTURE OF COMMONS	6(2+4)	6
01.03.70	TOURISM AND HOSPITALITY FACILITIES WITHIN THE CONTEXT OF THE PROTECTION OF CULTURAL-HISTORICAL AND NATURAL HERITAGE	6(2+4)	6

SYLLABUS FOR THE FIRST YEAR, 1st SEMESTER

Code: 01.03.19	**Title of the subject: Interior Architecture and Design 2**		
Cycle: 2nd	**Year: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: Obligatory		**Total number of hours: 15** Lectures	
Teaching staff	**Teachers and associates elected in the field/Department of architectural design**		
Prerequisites:			
Aim (aims) of the subject:	Introduction of historical development of the interior and furniture design in light of socio-economic and technical-technological background, focusing on radical transformations of the society that lead towards a metamorphosis of taste and spreading of ardents of the new artistic striving. Acquiring knowledge on the historical styles in interior and furniture design, with a special accent on the turning point of the Industrial Revolution and avant-garde movements in architecture, interior and design in the 20th century. Possibilities of designing specific interiors of residential and public buildings. Previous knowledge required: history of art, development of architecture, architectural compositions, materials and forms, other architectural design elements.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction: Worldview and stylistic expression; Styles of ancient civilisations: Ancient Egypt and Mesopotamia; Styles in antiquity – culture and worldview, aesthetical symbols for future civilisations; Middle Ages: Romanesque and Gothic art; Byzantine art and Islamic style; The Italian Renaissance – the return to antiquity and transition into the modern age; Interiors and furniture in the European Renaissance; Baroque – interiors in palaces, an outstanding furniture craftsmanship; Classicism – revival of ancient forms and the Empire style; The Biedermeier period and Arts and Crafts; Styles at the turn of the 20th century; The Art Nouveau in Belgium, France, Spain and Italy; The German workshop and secession; Bauhaus and the birth of Modernism; Modernism in interior and furniture design; Introduction to the contemporary forming of interiors and design.		
Learning outcomes:	Knowledge: Understanding and critical consideration of the significance of intertwining influences of socio-economic context on		

	interior design. Acquiring the knowledge on the impact of historical architectural and design precedents on the development of contemporary design directions and doctrines. Skills: The students will be able to identify, interpret and evaluate the historical interiors and furniture, and apply the acquired knowledge in the projects of contemporary interventions within the buildings pertaining to specific historical and/or cultural contexts. Competences: Acquiring competences related to the subject in order to apply the theoretical knowledge in the professional field of designing the residential or public interior typologies pertaining to specific historical and/or cultural contexts.
Teaching methods:	Lectures – multimedia presentations associated with the course thematic units.
Assessment methods including grading structure [1]:	Students are assessed through two tests (55-100%) during the semester or the final exam (45%).
Bibliography[2]:	Obligatory: Pile John:A History of Interior Design, 2005.; Sparke Penny: A Century of Design: Design Pioneers of the 20th Century,1998.;Cerver Francisco: Interior Design Atlas, 2000.; Zevi Bruno: Povijest moderne arhitekture, 2006.; Encyclopedia of Interior Design, urednica Banham Joanna, 2015.; Watkin David, A History of Western Architecture, 2005.; Salihović Erdin: Povijest enterijera i dizajna namještaja na razmeđu manualnog i industrijskog koncepta: Od Arts and Craftsa do Art Decoa, 2016.; Abercrombie Stanley & Whiton Sherrill: Interijeri, Arhitektura, Dizajn-Povijesni pregled, 2016.

[1] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[2] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.06.23	Title of the subject: LOAD-BEARING STRUCTURES		
Cycle: 2nd	Year of the study: 1st	Semester: 1st	Number of ECTS credits: 4
Status: Obligatory		Total number of hours: 60 Lectures 30 Exercises 30	
Teaching staff	Teachers and associates elected in the field to which the subject belongs - Department of Structural Systems		
Prerequisites:	None.		
Aim (aims) of the subject:	Acquiring the basic knowledge on long span constructions and multi storey objects made of contemporary materials (concrete, steel, wood/base materials): selection of materials and structural system, bracing system formation, possibility of individual approximate verification of dimensions at cross sections, forming junction details and the correct method of foundation.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	*Natural and technical structures:* similarities and differences. *Structural conceptual design:* An introduction; Contemporary development trends; Loads; The basic concept of large span structures and high rise objects behaviour; The flow of forces and stress. Energy method - application of rod models (principle of design, materialization and optimization). Comparison of systems derived from different materials - efficiency, cost-effectiveness. *Span structures:* classification, system – material – applicable spans. *Tower structures:* Classification; The basic principles of designing multi-storey buildings; Horizontal and vertical load-bearing construction; Elements ensuring stiffness of buildings; Multi-storey building foundation. *Characteristic elements of concrete buildings:* Wall beams: General characteristics; Stress and forces in cross sections of wall beams; Budget model (rod system - examples of other materialization). Dimensioning and reinforcement of wall beams. Kinds of fractures and the task of dimensioning; Dimensioning and arrangement of wall beam reinforcement; Concrete stress control under pressure. Walls: General characteristics; Stress and forces at cross sections; Dimensioning and reinforcement of walls. Columns: Centrically and eccentrically loaded short columns; Slenderness influence; Dimensioning of intermediate ratio columns. Short cantilevers: General characteristics. Shot cantilever calculation models: Short cantilever loaded on the upper end; Indirect load of the short cantilever; Short cantilever reinforcement details; Short cantilever loaded on the upper end reinforcement; Indirectly loaded cantilever reinforcement, cantilever beams, Prefabricated short cantilevers; Frame constructions: Characteristics, application and systems, material selection. Closed frames. Calculating and		

	dimensioning reinforced concrete frames. Joint reinforcement in cases of internal and external tension. Reinforcement of wall and floor slab joints. Details of reinforcing girder and exterior beam joints. Details of reinforcing frames prone to significant seismic events; Joints in reinforced concrete structures. Foundations: Introduction; Selection of foundation system (geotechnical conditions and interaction of structure and foundation ground); Calculation of foundations; Unreinforced foundations; Belt concrete beam foundations under walls; Spot footing under walls; Eccentrically loaded columns under foundations.
Learning outcomes:	Knowledge: Independent design and dimensioning of structural elements of wood, steel and concrete. Skills: Ability to independently solve the concept of load-bearing construction of an architectural building in given materials. Competences: After mastering the content and after completing the seminar assignments on examples of welded objects, students should be able to understand and design a long spam contemporary construction or a multi-storey object, as well as individually select materials and structural systems in accordance with the conditions at the location and independently perform dimensioning of structural elements and structures with an adequate load analysis.
Teaching methods:	Lectures and practical classes that focus on creating numerical examples, as well as additional consultations and solving issues students may have in understanding the lecture and exam preparation. Seminar assignments are performed with the help of the professor and the assistant in practical classes. Public presentation of seminar assignments.
Assessment methods including grading structure [3]:	Students are assessed through the presentation of seminar assignments in presence of the professor and the assistant. Candidates who do not pass are obliged to take the final, theory-based exam. The final grade is formed from the completed, presented and defended seminar assignment, or a successfully completed final exam. Students who get the second signature in the index are eligible to take the final exam, meaning that they have fulfilled the obligations as prescribed by the Statute. The exam is prepared through lectures and practical classes, as well as through the use of literature recommended by the professor and the assistant at the beginning of the teaching.
Bibliography[4]:	Obligatory:

[3] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[4] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special**

	Miljanović, S. *Predavanja nastavnika.* (An unpublished set of lectures) Mešić, E., Miljanović, S. (2013). *Savremeni koncepti rasponskih konstrukcija – drvene i metalne konstrukcije*. Sarajevo: Građevinski fakultet. Mešić, E., Miljanović, S. (2012). *Savremeni konstrukcijski koncepti višespratnih zgrada – metalne i spregnute konstrukcije*, Sarajevo: Građevinski fakultet. Additional: Gojković, M., Stojić, D. (2007). *Drvene konstrukcije*. Belgrade: Grosknjiga. Hart, F., Henn, W., & Sontag H. (1991). *Atlas čeličnih konstrukcija,* Belgrade: Građevinska knjiga. Herzog, T., Schweitzer, R., & Volz, M. (2003). *Holzbau atlas.* Munich: Institut für internationale Architektur-Dokumentation. Evrokod 2: Proračun betonskih konstrukcija – Deo 1: Opšta pravila i pravila za proračun zgrada. Belgrade: Građevinski fakultet Univerziteta u Beogradu, 1994. Tahirović, I. V. (2001). Armirani beton I,II. Sarajevo: Svjetlost. Tomičić, I. (1984). Betonske konstrukcije. Zagreb: Školska knjiga. Zlatar, M. (2006). Lectures"Armirano-betonske arhitektonske konstrukcije 1 i 2". Sarajevo.

Code: 01.03.11	Title of the subject: ARCHITECTURAL DESIGN 7		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: Obligatory		**Total number of hours: 30** Lectures: 15 Exercises:15	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:	-		
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and morphological character of museums, libraries, theatre and sacral buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of cultural buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the museums, libraries, theatre and sacral buildings of the average complexity.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of cultural buildings; 2. Contemporary principles of organizing cultural buildings; 3. Spatial-functional groups and spatial configuration of cultural buildings; 4. Urbanistic, architectural and ambient aspects of the planning of cultural buildings; 5. Architectural programming of cultural buildings; 6. Analysis of architectural types and functional-spatial units of cultural buildings.		
Learning outcomes:	**Knowledge:** programming and architectural design of cultural buildings. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the museums, libraries, theatre and sacral buildings develop through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. Developing skills for presentation and communication of a project design solution. **Competences:** The student is able to create the conceptual architectural project of the cultural building of the average complexity, based on the integrated knowledge from several previous professional subjects, simultaneously		

	mastering the design conceptual and technical-methodological basics of architectural design.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [5]:	Students are assessed through successfully executed practical assignments (60% of the grade); Test, Presentation and project defense (40% of the grade);
Bibliography[6]:	Obligatory: Current professional and theoretical literature in the field of architecture of museums and libraries Picard,Q., RIBA, The Architects Handbook, Blackwell, 2002; Neufert,E., Arhitects' Data, Blackwell Science, Third Edition, 2000 De Chiara, J., Crosbie J.M., Time-Saver Standards for Building Types, McGraw-Hill – Fourt Edition, 2001 Von Naredi-Reiner,P., Museum Buildings: A Design Manual, Birkhäuser, 2004 Hoffmann, H.W., edited by Schittich,Ch., Construction and Design Manual: Museum Buildings, DOM publishers, 2016 Lushington, N., Rudolf, W., Wong, L., Libreries: A Design Manual, Birkhäuser, 2019 Shmolke, B., Construction and Design Manual Theaters and Concert Halls, DOM publishers, secondedition, 2011 Stegers, R., Sacred Buildings, Design Manuals, Birkhäuser, 2011 Additional: Durmišević,E., Pašić,A., Çolakoğlu,B., Dynamic Architecture, University of Twente, 2015 Recent Architectural Magazines, Books about Architecture, Urban planinng, Urban design and Landscape, Architectural Design Manuals and Monographs of Architects

[5] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[6] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.13	Title of the subject: ARCHITECTURAL DESIGN 9		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 6
Status: Obligatory		**Total number of hours: 75** 30 Lectures 42 Exercises 3 Field work	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs, Department of architectural design**		
Prerequisites:	none		
Aim (aims) of the subject:	The aim of the subject is to introduce students to the issues related to industrial objects, their characteristics depending on the location, function, technological process, the selection of an adequate structure through application of characteristic constructive systems, emphasis of architectural-formation components and humanisation of the constructed area. Students are introduced to the philosophy of construction of such objects in macro and micro surrounding, as well as their interaction with the constructed and natural environment. Finally, candidates are enabled to master the methodology of designing such objects in practice.		
Content:	1. Historical development of industry, design and construction of industrial objects; 2. Industrial object and the complex location selection criteria; 3. Industrial zones, industrial neighborhoods, industrial complexes and production halls 4. Classification of industrial buildings 5. Traffic organization within industrial complexes and halls. 6. Analysis of technological demands; 7. Workplace (dimensions, organization, energy supply, static-dynamic and microclimatic characteristics, lighting, etc.); 8. Equipping and treatment of workshops – workplace safety; 9. Characteristic types and constructive assemblies of industrial buildings; 10. Material selection criteria for construction; 11. Constructive characteristics of concrete structures; 12. Constructive characteristics of steel structures;		

	13. Constructive characteristics of wooden structures; 14. Auxiliary services in an industrial complex (entrance facility, surgery, wardrobe, kitchen, restaurant, buffet); 15. Study visit (visiting a representative object).
Learning outcomes:	**Knowledge**: Acquiring specific knowledge of industrial buildings and their design. **Skills:** Mastering skills of practical application of specific knowledge of designing industrial building. **Competences:** Designing industrial buildings in practice
Teaching methods:	**Ex-cathedra lectures;** **practical classes – project;** **visiting representative building**
Assessment methods including grading structure [7]:	Partial exams, two during semester 16% + 16%, 64% graphical assignment, Lecture Activity and attendance 4% and / or integral/final exam 32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[8]:	Obligatory: **1.** Alikalfić, Vera: ***Industrijski objekti i industrijski kompleksi***, Sarajevo, Arhitektonski fakultet u Sarajevu, 2004 **2.** Damjanović, Vojislav: ***Industrijski kompleksi i ugrade***, Beograd, Građevinska knjiga, različite godine izdanja **3.** Fejzić Emir, Bilalić Sabrija: ***Projektovanje_9, industrujski objekti***, skripta Additional: **1.** Kurent, Tine: ***Razvoj industrije in tovarn***, Ljubljana, VTOZD Arhitektura - Univerza Edvarda Kardelja, 1980 **2.** Dančević, Desimir: ***Industrijski objekti***, Niš, Zajednica zavoda za zaštitu na radu, 1967

[7] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[8] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

3. Nestorović, Miodrag: ***Konstruktivni sistemi - principi konstruisanja i oblikovanja***, Beograd, Arhitektonski fakultet Univerziteta u Beogradu, 2000
4. Popović, Žorž: ***Zgradarstvo***, Beograd, Izdavač autor, 2000
5. Georgijevski, Vladimir: ***Lake metalne konstrukcije***, Beograd, Građevinska knjiga, 1990
6. Dančević, Desimir: ***Konstruktivni sistemi u visokogradnji***, Niš, Institut za dokumentaciju zaštite na radu, 1978
7. Rile, Herman i dr.: ***Prostorne krovne konstrukcije***, Beograd, Građevinska knjiga, 1977.
8. Adam, Jürgen; Hausmann, Katharina; Jüttner Frank: ***Industrial buildings - a design manual***, Birkhäuser - Publishers for architecture, Basel.Berlin.Boston, 2004
9. Henn, W: ***Industriebau (Band I, II, III I IV),*** Verlag Georg D.W.Callwey, München, 1966.
10. Sommer, D: ***Industriebau - Radikale Umstrukturierung - Praxisreport***, Birkhauser, Basel, 1995.
11. Wustlich, R: ***Industriarchitektur in Europa***, Verlag Das Beispiel GmbH, Darmstadt, 1996.
12. Sommer, D. i J. Uh: ***Industriebau - Markt Macht Stadt*** - Praxisreport, Vincenzt Verlag, Hannover, 1997.
13. Edited by Julian Weyer & Sergio Baragano: ***Industrial building planning and design***, Design Media Publishing Limited, Hong Kong, 2013
14. Chris van Uffelen: ***Faktory Design***, Braun Publishing AG, Berlin, 2009.

Code: 01.04.09	Title of the subject: SPATIAL PLANNING		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 2
Status: obligatory		**Total number of hours: 30** Lectures: 22 Exercises: 8	

Teaching staff	Teachers and associates elected in the field of urbanism and spatial planning
Prerequisites:	none
Aim (aims) of the subject:	Introduction to the spatial planning theories and morphological functional formations of the constructed area; Affirmation of spatial planning methodology as a multidisciplinary profession and a spatial development quality control tool; Spatial planning theory and practice in Bosnia and Herzegovina; Global and European trends in spatial planning.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	(1) spatial planning terminology, definitions and theories, scales (from Agenda 21 to spatial city plan); subject explanation and semester research work methodologies (2) the state of space (population, urbanization, center and periphery and ecological footprint), (3) Bosnia and Herzegovina spatial planning theory; spatial planning goals (goals, public and private interests, societal infrastructure and sustainable/just development), (4) exercises: research work (data collection methodology), (5) economy (sectors, components and ethics – from the Washington to the Beijing consensus), (6) spatial planning methodology (methodology, methods and forecast), (7) spatial planning methodology (spatial planning and politics), (8) exercises: research work (data processing methodology), (9) spatial systems (classification, settlement network and system; development poles and axes; conurbations, interurbations, environment protection), (10) special planning in Bosnia and Herzegovina (spatial plans of SRBiH, peace agreements, spatial plans EFBiH, ERS i DBBiH), (11) exercises: research work (results presentation), (12) planning of Europe: profession regulation and obligations, spatial-functional formations (from Hanse to *red octopus*) and development perspectives (ESDP – uniform development, competitiveness and future scenarios), (13) exercises: research work (results discussion), (14) ethics and spatial planning practice (deregulation) and (15) discussion (students' experiences and open questions, answers) and evaluation.

Learning outcomes:	Knowledge: Knowledge of spatial planning, methodology and skills included in the planning process; awareness of views originating from other national and cultural environments and respect for them Skills: Capability of developing transdisciplinary understanding of an architect-spatial planner; capability of preparing, processing, interpretation and presenting data using relevant qualitative and quantitative techniques Competences: spatial systems analysis and interpretation
Teaching methods:	Lectures and discussion Seminar assignment – spatial analysis; an individual and group assignment related to the topic of defining metropolitan areas, settlement network and system of settlements, social infrastructure, city centres system.
Assessment methods including grading structure [9]:	Semestral assignement (40%), activity (10%) and final exemine (oral and graphical presentation of individual/group assignment and a critical analysis of research results) (0–50 %).
Bibliography[10]:	Obligatory bibliography: Bogunović, S. (1984). *Metodološke osnove za izradu prostornih planova*. Sarajevo: Institut za arhitekturu, urbanizam i prostorno planiranje Arhitektonskog fakulteta Sarajevo. European Commission (1999). ESDP – European spatial development perspective: Towards balanced and sustainable development of the territory of the European Union. Luxembourg: Office for Official Publications of the European Communities. **Komisija za urbanizam i prostorno uređenje Savezne skupštine** (1971). *Osnove politike urbanizma i prostornog uređenja*. Pravilnik o načinu izrade, sadržaju i formiranju dokumenata prostornog uređenja (2013). *Službeni glasnik RS*, broj 69/13. Pravilnik o sadržaju, načinu izrade i donošenja dokumenata prostornog uređenja (2011). *Službeni glasnik RS*, broj 59/11. Prostorni plan Bosne i Hercegovine (1982). *Službeni list SRBiH*, broj 18/82, prečišćeni tekst: 33/88, 15/89. Prostorni plan FBiH za period 2008–2028. godina (2012). Prijedlog Plana.

[9] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[10] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Prostorni plan Republike Srpske do 2025. godine (2015). *Službeni glasnik RS*, broj 15/15.
Uredba o jedinstvenoj metodologiji za izradu planskih dokumenata (2004). *Službene novine FBiH*, broj: 63/04, 50/07, 84/10.
Zakon o prostornom planiranju i korištenju zemljišta na nivou Federacije Bosne i Hercegovine (2006). *Službene novine FBiH*, broj: 2/06, 72/07, 32/08, 4/10, 13/10, 45/10.
Zakon o uređenju prostora i građenju (2013). *Službeni glasnik RS*, broj 40/13.
Dopunska literature:
Berry, B.J.L. (1970). *Geographic perspectives on urban systems*. London: Prentice Hall, International, INC.
Dühr, S. Colombo, C. i Nadin, V. (2010). *European Spatial Planning and Territorial Cooperation.* Oxon: Routledge.
Glasson, J. (1978). *Regional planning*. London: Hutchinson of London.
Johnson, A. H. (1970). *Urban geography*. London: Pergamon Press.
Krešić, I. (1977). *Prostorna ekonomija*. Zagreb: Informator.
Marinović-Uzelac, A. (1985). *Teorija namjene površina*. Zagreb: Liber.
Marinović-Uzelac, A. (2001). *Prostorno planiranje*. Zagreb: Dom svijet.
Žuljić, V-J. (2003). Funkcije centraliteta glavnog grada države – Sarajevo: Faza I. *Studija za potrebe izrade Prostornog plana Kantona Sarajevo, 2003–2023*. Sarajevo: Ministarstvo prostornog uređenja i zaštite okoliša Kantona Sarajevo.
Žuljić, V-J., Čengić, N. i Čakarić, J. (2015). *Sarajevo metropola – Koncept razvoja*. Sarajevo: Arhitektonski fakultet Sarajevo.

Code: 01.04.04	**Title of the subject: URBAN DESIGN 4**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: Obligatory		**Total number of hours:** 30 Lectures 15 Exercises 15	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning		
Prerequisites:	None.		
Aim (aims) of the subject:	The goal is to introduce students to the definition, elements, and the essence of urban design, as well as to the kinds and ways of transformation of the constructed area; as well as to provide an insight into the urban structure and city architecture changing processes; Clarification of the role of an urbanist-designer in relation to the kinds and levels of transformations of (a part of) the city, as well as in relation to the relevant spatial-planning regulation.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction (the basic elements of knowing the city); Archaism of the city (the archetype and the symbol, Mental models); Types and concepts of city construction (from archetypes and symbols to the city; Interpretation of terms: Urban and archetypal matrix, Topos, Development and growth of the city – agglomeration, conurbation, megalopolis, City shape, City plan, Urban form); Urban space morphology (urban morphology determinants, Urban morphology structure – street, square, block, city silhouette); Genius loci – the spirit of a place (Place and character – orientation and recognition, Identification and character – the natural and the created place; Identity – residence and gathering, Architecture and genius loci); Introduction to theory and techniques of urban transformations (Phases of creating design projects of transformations, Importance and meaning of design projects of urban transformations, Significance and meaning of design projects of urban transformations, The role of an urbanist – designer in the creation of urban space transformations).		
Learning outcomes:	Knowledge: Understanding the issues related to changes of the city and the essence of urban transformation processes as an active act of (re)decoration of human surrounding, from a selected scope of an urban context;		

	Skills: Defining the urban (re)design in relation to morphological, historical, generative, social, functionalistic, ideological, economical, technical-technological, perceptive and contemporary incentives; Competences: Forming a glossary of terms and introduction to the urban transformation methodology;
Teaching methods:	Theoretical part (lectures and individual consultations and practical part (practical classes – development of a detailed urban design of transformations at a selected complex, entailing a graphical and conceptual solution); Field work (surveying users of a space, an insight onto the work of the relevant institutions).
Assessment methods including grading structure [11]:	Partial evaluation (two tests during the semester which consist of a graphical conceptual design of the transformation - I: 12,5-20% and II: 7,5-10%), graphical conceptual design of the transformation (20-30%) and the final exam which focuses on testing knowledge acquired in the theoretical section (15-30%); The final grade consists of students activities in the classroom (5/10%), grades achieved at the graphical part and at the final exam. A positive grade in the conceptual design of a transformation which is a precondition for the final written exam.
Bibliography[12]:	Obligatory: Čakarić, J, Urbanističko projektovanje 4 – Skripta, Arhitektonski fakultet u Sarajevu, 2013 Cullen, G, Gradski pejzaž, Građevinska knjiga, Beograd, 1971 Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Čakarić, J, Doktorska disertacija: Voda u „ideji“ grada. Poseban osvrt na transformaciju i kontekst, Arhitektonski fakultet, Sarajevo, 2010 Čakarić, J, Magistarski rad: Grad i voda, Arhitektonski fakultet, Sarajevo, 2008 Kostof, S, A History of Architecture. Settings and Rituals, Oxford University Press, Inc, Oxford, New York, 1995 Kostof, S, The City Shaped. Urban Patterns and Meanings Trough History, Thames&Hudson, Ltd, London, 2001 Krier, R, Gradski prostor u teoriji i praksi, Građevinska knjiga, Beograd, 1999

[11] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[12] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Lynch, K, Slika jednog grada, Građevinska knjiga, Beograd, 1974 Norber-Schulz, C, Genius loci, AE, London, 1979 Radović, R, Forma grada, Stylos, Novi Sad i Orion Art, Beograd, 2003 Additional: Marinović-Uzelac, A, Prostorno planiranje, Dom i Svijet, Zagreb, 2001 Mumford, L, Kultura gradova, Mediterran Publishing, Novi Sad, 2010 Norber-Schulz, C, Intencije u arhitekturi, Naklada Jesenski i Turk, Zagreb, 2009

Code of subject: 01.02.08.	Name of subject: PRESERVATION OF ARCHITECTURAL HERITAGE		
Cycle: 2nd	Year: 1st	Semester: 1st	Number of ETCS credits: 3
Status: OBLIGATORY		Total number of hours: 30 Optional distribution of hours by type: **Lectures 15** **Exeminiation 15**	

Participants	**Teachers and associates elected in the domain to which the subject belongs** Field of theory and history of architecture and preservation of cultural heritage
Pre-requisite for enrollment	-
Goal (objectives) of the course:	Historical Concept: Considering the architectural heritage, the historical framework is defined by the boundaries of the Middle Ages from one and the socialist period on the other. Theoretical concept: Acquiring knowledge on methods of research, analysis, valorization, and protection and reconstruction - conservation and restoration. Practical concept: Getting acquainted with numerous tools that appear as methods in the teaching process, enable students to develop complete projects, aligning the interdisciplinary and specificity of the ZGN. Economic tools such as the sustainability and SWOT analysis are used, to the extent necessary for the elaboration of the protection or protection and reconstruction project.
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	1. Information, literature, mode 2. Methods of protection: RESTAURATION AND CONSERVATION - Renovation and protection of the architectural heritage 3. Methodological approach (research, analysis, valorization, determination of protection boundaries and contact zones) 4. Choice of methodological procedure 5. Active protection of the architectural heritage 6. Use of the architectural heritage 7. Feasibility studies / sustainability studies 8. Determination of degradation and methodologies 9. Determination of degradation and methodologies 10. Defining the level of intervention 11. Preventive protection methods before restoration 12. Determination of guidelines for the active protection of

	the architectural heritage 13. Methods of protection and economics of the cultural property
Exercises - practical work (weekend exercise plan)	1. Assign tasks to each candidate individually 2. Exploring historical location data 3. Urban situation of the situation 4. Historical urban transformation 5. Historical urban transformation 6. Records cards 7. Records cards 8. Evidence cards 9. Clausura 10. Ambition cards 11. Reference example 12. Analysis according to ambient parameters 13. Management plan 14. Feasibility studies 15. Project program + reference examples
Learning outcomes:	**Knowledge:** Through this course, students gain knowledge of the entire process of protection of the architectural heritage, using all the complex tools available and applying the methodological procedure of the original and existing state, this time on a wider scope, which is treated as an ambience and which through numerous parameters confirms the uniformity or diversity in style. sense. **Skills:** Ability to define and solve problems in ambient units and in valorized objects, making it possible to make certain decisions based on valorisation. **Competences:** Through this course, students gain competencies to make independent judgments within established ambient values and to make a decision on site intervention using all the learned tools, ie methods, through learning about ambient values through the development of ambient maps in practice and on specific tasks.
Methods of teaching:	Lectures with projections and comparison with different methods and techniques. Work under supervision - a project. Work on exercises.
Knowledge testing methods with a rating structure[13]:	Exercises - semester assignment - 25-40% Activity - 0-10% Final exam - 30-50%

[13] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

	Partial knowledge assessment after the 6th and 13th lectures.
LiteraturE[14]:	**Required**: Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh Akšamija L., Arhitektura svrhe, . Arhitektonski fakultet, Sarajevo, 2004. Chabbouh Akšamija L., Šabić L., Tradicionalna travnička kuća, Zavičajni muzej u Travniku, Arhitektonski fakultet, Sarajevo, 2018. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015. Hrasnica, M., Arhitekt: Josip Pospišil - život i djelo, Sarajevo, Arhitektonski fakultet, 2003. Husedžinović , S, Valorizacija islamske sakralne arhiekture Banja Luke s analizom njenog rušenja kroz povijest (neobjavljena doktorska disertacija), Zagreb, 1997. Krzović, I. Arhitektura BiH 1878-1918, Sarajevo, Umjetnička galerija BiH, 1987. Kurto, N., BiH, razvoj bosanskog sloga, Sarajevo, Međunarodni centar za mir, 1998. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Redžić, H., Islamska umjetnost (Umjetnost na tlu Jugoslavije), Beograd, Zagreb, Mostar, IZJ, 1975. Redžić, H., Studije o islamskoj arhiektonskoj baštini, Sarajevo, Svjetlost, 1983. Sanković Simičić V., Revitalizacija graditeljske baštine, NNP naša riječ d.o.o., Sarajevo, 2000. Schuller, M., Building Archaeology, München, ICOMOS, 2002. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. Zevi, L., Il Manuale del Resauro Architettonico, Mancosu editore, Roma, 2002. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

[14]The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

ELECTIVE COURSES IN 1st SEMESTER

Code: 01.04.10	**Title of the subject: CITY CENTRES**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 45** Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [field – urbanism and spatial planning]
Prerequisites:	none
Aim (aims) of the subject:	The aim of the subject is to elaborate the phenomena, distribution, hierarchy and functional organisation of all types of city centres. Their relationship as opposed to the urban grounds and parking spaces and vehicular traffic. (Engagement on an urban project in urban development and architectural companies.)
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	City centres – functions of centrality; Classification of city centres (gravitational classification and gravitational sphere of influence; functional classification, classification of centres from the aspect of urban form and shapes); Centrality, nodality and local use; Urban system as a consequence of gravitational classification of city centres; Ways and concepts of organisation of central areas of the city; Functional atractivity as a method of measuring intraurban systems of city centres; Compositional elements of city centre spatial organisation; Urban equipment of central areas of the city; Pedestrian zones as a conceptual determinant of city centres; Traffic and its specificities in the central zone of the city; Themes covered in practical classes: analysis of the inherited central city zones from different periods (a medieval, renaissance, baroque... contemporary city and its centre); urban morphology analysis – elements that shape city centres; accents as recognisable reference points within centrality functions and open areas of the city.
Learning outcomes:	Knowledge: Ability to receive and react to information from different sources (textual, numeric, verbal, graphical); Knowing spatial planning and skills that are a part of the planning process; Ability to prepare, process, interpret and present the data with the use of suitable qualitative and quantitative techniques.

	Skills: Competences:
Teaching methods:	Lectures and comments – between the theory and applied practice. Measuring city centre systems.
Assessment methods including grading structure [15]:	Semestral assignement (40%), activity (10%) and final exemine (oral and written/graphical presentation of individual/group assignment and a critical analysis of city centre system measurements) (0–50 %).
Bibliography[16]:	Obligatory: Bacon, E. N. (1969). *Design of Cities*. London: Thames & Hudson. Ćuković, M. (1985). *Gradski centri*. Sarajevo: Svjetlost. Gosling, M. (1984). *Urban design*. New York: St. Martin's Press. Krier, R. (1980). *Urban space*. London: Academy editions. Maretić, M. (1966). *Gradski centri*. Zagreb: Školska knjiga. Martinović, T. (1977). *Slobodno vrijeme i suvremeno društvo*. Zagreb: Informator. Samuels, I., Panerai, P., & Castex, J. (1989). *Urbane forme*. Beograd: Građevinska knjiga. Taylor, L. (Ed.). (1988). *Urban open space*. London: Academy editions. Zite, K. (1967). *Umjetničko oblikovanje gradova*. Beograd: Građevinska knjiga. Žuljić, V-J. (1981/1998). *Gradski centri; Stanovanje – stambena naselja; Makrourbani centri; Rekreacija - Separati*. Sarajevo: Arhitektonski fakultet Sarajevo. Additional:

[15] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[16] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.15	Title of the subject: MACRO-URBAN AREAS		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 45** Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [field – urbanism and spatial planning]
Prerequisites:	none
Aim (aims) of the subject:	Studying the basic urban indicators in the phase of development of certain macro-urban areas for specific purposes. Ways of internal organisation and goals of their construction.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Macro-urban areas as a need of the contemporary organisational forms in urban and also wider areas; the basic characteristics of macro-urban areas and functions pertaining to this form of urban solution; the relationship between the city – an urban area and a macro-urban centre; internal traffic of the macro-urban centre and connections between the centre and the city traffic system; spatial and formation characteristics and specificities of macro-urban areas; an analysis of three to four macro-urban areas at practical classes (traffic terminals, fair and exhibition premises, eco-techno parks, large shopping centres, etc.). Topics treated at practical classes: an analysis of a macro-urban areas and finding an adequate location of the centre, in a certain city, that is, its widest surrounding; a proposal for conceptual organisational scheme of a centre – a composition sketch.
Learning outcomes:	Knowledge: Understanding the importance of a good location selection regarding the nature of a macro-urban area; Understanding functional organisation of the selected macro-urban centre. Knowledge of legislation regulating this field. Skills: Competences:
Teaching methods:	Ex-cathedra lectures with adequate analyses and programme criteria

Assessment methods including grading structure [17]:	Semestral assignement (40%), activity (10%) and final exemine (oral and graphical presentation of the individual/group work and a critical analysis of the results) (0–50 %).
Bibliography[18]:	Obligatory: Bacon, E. N. (1969). *Design of Cities*. London: Thames & Hudson. Ćuković, M. (1985). *Gradski centri*. Sarajevo: Svjetlost. Gosling, M. (1984). *Urban design*. New York: St. Martin's Press. Krier, R. (1980). *Urban space*. London: Academy editions. Maretić, M. (1966). *Gradski centri*. Zagreb: Školska knjiga. Norberg-Schulz, C. (1975). *Egzistencija, prostor i arhitektura* (M. J. Maksimović, Transl.). Beograd: Građevinska knjiga. Samuels, I., Panerai, P., & Castex, J. (1989). *Urbane forme*. Beograd: Građevinska knjiga. Taylor, L. (Ed.). (1988). *Urban open space*. London: Academy editions. Žuljić, V-J. (1984/1990/2000). *Gradski centri; Stanovanje - stambena naselja; Makrourbani centri; Rekreacija, Separati*. Sarajevo: Arhitektonski fakultet Sarajevo. Additional:

[17] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[18] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.30	Title of the subject: PRESCHOOL BUILDINGS		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 45** Lectures 15 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Department of Arhchitektural Design**
Prerequisites:	-
Aim (aims) of the subject:	Introducing students to issues in the process of designing buildings for preschool children and development of awareness as per specific needs of preschool children, as well as introduction to variety of approaches and contemporary architectural trends for the purpose of finding adequate architectural solutions that need to be an optimal framework for the realisation of needs of preschool children.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Since the teaching process is conducted within an elective subject, and keeping in mind the limited number of students (not more than 21), the content related to buildings for preschool children is treated. For the purpose of introducing students more comprehensively to the matter related to such spaces, themes that concern children, their perception, and symbolic spatial experience – imagination, sensory and motoric spatial experience and participation in space are treated in lectures and practical classes. Apart from that, different preschool pedagogical systems directly influencing the spatial organisation are considered.
Learning outcomes:	Knowledge: By successfully mastering content of the subject, students acquire knowledge on the needs of children, nature of space they spend time in, as well as on both direct and indirect influence of space to a possibility of stimulation of imagination that promotes creativity development. Skills: Students adopt project design skills, project planning and organization, presentation and communication skills. Competences: Students master the design and planning skills regarding pre-school buildings.
Teaching methods:	Lectures and practical classes are obligatory and are organised as a combination of informative and interactive classes for which the students need to pre-prepare during the week (cca. 4 hours a week). Students are obliged to actively participate at lectures and practical classes in a minimum of 80% of the total number of Contact hours. Apart from participation at lectures during which tests are organised, in practical classes each student needs to participate in a group consisting of three students, and prepare a

	thematic project of a smaller preschool institution/kindergarten at a fictitious or real location with previous consultations with the professor in charge of the subject. Students orally present the assignment that consists of an analytical part, as well as creation and presentation of an architectural project. The scope of the assignment within practical classes is dimensioned with respect to the number of guided learning planned for the subject, which the student should use for preparation of the work.
Assessment methods including grading structure [19]:	In the classes described above, students are assessed during the semester (lectures and practical classes) and if they prove successful in all requirements of the subject, they are assessed and awarded a certain number of points and do not take the final presentation.
Bibliography[20]:	Obligatory: Došen-Dobud, A. (1977). Odgoj i obrazovanje u dječijem vrtiću. Zagreb: Pedagoško-književni zbor. Dudek, M. (2000). Kindergarten Architecture. London: Spon Press. Kara Pešić, Ž. (1986). Dorasti za bravu. Belgrade: Zavod za izdavačku delatnost "Filip Višnjić". , Additional: Korać, Ž. (1985). Razvoj psihologije opažanja. Belgrade: Nolit. Mandić, R. (2002). Prostori imaginacije. Sarajevo: Arhitektonski fakultet. Mandić, R. (2010/2011). Skripte iz predmeta Objekti za djecu predškolskog uzrasta. Izbor tekstova raznih autora. (An ubpublished manuscript). Piaget, J. (1983). Poreklo saznanja (M. Nikolić, Transl.). Belgrade: Nolit. Valon, A. (1985). Psihički razvoj deteta. Belgrade: Zavod za udžbenike i nastavna sredstva.

[19] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[20] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.47	**Title of the subject: PROBLEMS OF MODERNITY OF SINGLE-FAMILY HOUSES**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits: 6**
Status: ELECTIVE		**Total number of hours: 90** Lectures 30 Exercises 54 Field work / site visits 6	
Teaching staff	**Teachers and associates elected in the field/Department of architectural design / Department of architectural construction and building technology / Guest lecturers**		
Prerequisites:			
Aim (aims) of the subject:	Contemporary lifestyle influences the change in the concept of housing, both functionally and aesthetically. However, the traditional way of experiencing housing spaces is still highly present. The goal is to introduce students to the relevant elements of contemporary understanding of living spaces, and to teach them a free and creative approach to forming modernity in architecture of such objects. To emphasise the significance and complexity of building envelopes through technical-technological principles, constructive solutions and materialization, for the purpose of advancing architectural ambience, energy balance and building modernity. They are the place of collision between internal parameters defined by existential human needs, and external parameters, defined by social and natural surrounding.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Through a series of lectures, students will be introduced to all important elements and circumstances that influence the formation of awareness on the contemporary residential space. At the same time, they will understand the importance of differentiating the key terms (modern, modernisation, modernity) in architectural theory and their application in a concrete assignment. Through a synchronised work at lectures and practical classes, aided by the relevant examples, students will analyse the contemporary architectural realisations and will offer their own solutions for “new modernity” of family houses that are congruent with the needs of the society and the environment. Concrete city location is selected for the topic of the assignment, and the process itself is unfolded in cooperation with relevant institutions, with full respect of objective characteristics and cultural identity. After the introductory lectures of the essence and importance of new contemporary living concepts, students will be further introduced, through lectures, practical and research work, to the principles of materialization, systems, components and passive		

	strategies in architectural design (atrial concept, transparent envelopes designed to meet building physics requirements and EE, natural materials - contemporary solutions).
Learning outcomes:	Knowledge: Understanding the essence and importance of new concepts of contemporary housing, conditioned by an "accelerated evolution", that is, accelerated changes in all segments of life. Considering architectural issues of the family house as an important part of the present and future constructed space, as well as accepting the contemporary architectural expressions for the purpose of increasing the quality of life and constructing the system of values that supports humanisation and democratisation of architecture as art, which is socially and ethically responsible. Skills: Students acquire skills of analytical approach to the particular design problem, by using the synthesis of theoretical and practical approach. They, also, acquire skills to guide and realise specific design process, from initial designing idea into the concrete conceptual project. Competences: It is expected that the students will, in cooperation with the relevant institutions, offer guidelines (presented in the form of a study) for designing family houses at specific urban locations, for the purpose of further advancing construction and redesign. Students will be introduced to the contemporary concepts of transparent envelope materialization and the use of natural materials in terms of sustainable design, better quality of life and EE (traditional experience - contemporary solutions).
Teaching methods:	The teaching process includes a theoretical part, delivered at lectures, as well as a practical part, implemented at practical classes at which sketches, analysis and models are developed, resulting in a new proposal (project), adequately presented. Students work in two phases – group work, where they determine the basis and guidelines for the entire locality, as well as individual work, where every student develops a detailed conceptual design of an object on a selected parcel, with accompanying construction details. An important segment of work is continual engagement on the model in all phases of the designing process.
Assessment methods including grading structure [21]:	The grade is assigned through the in-semester project development of the assignment in three phases (50%), final project delivery + presentations (40%) and student participation (up to 10%).
Bibliography[22]:	Obligatory: Colquhoun, A. (1989). Modernity and Classical Tradition – Architectural Essays 1980-1987. Cambridge, Massachusetts: MIT Press.

[21] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[22] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special**

	Ibelings, H. (2002). Supermodernism Architecture in the Age of Globalization. Rotterdam: NAi Publishers. Jencks, C. J. (1986). Moderni pokreti u arhitekturi (S. Litvinović, S. Maksimović, Transl.). Belgrade: Građevinska knjiga. Ugljen-Ademović, N. (2007). Dvojnost pristupa problemu integriranja novog u postojeće u arhitektonskom oblikovanju (Doctoral dissertation) Baylon, M. (1980) Stanovanje - Tema 6: Stan - kuća. Beograd: Arhitektonski fakultet. Blum, H.-J., Compagno, A., Fitzner, K., Heusler, W., Hortmanns, M., Hosser, D., . . . Sedlacek, G. (2001). Doppelfassaden. Berlin: Ernst & Sohn Compagno, A. (2002). Intelligent Glass Façades: Material, Practice, Design. Basel: Birkhäuser. Duran, S. C. (Ed.). (2011). Energieeffiziente Häuser. Barcelona : FKG Fajardo, J. (Ed.). (2008). Skin. Architecture & Volume. Kerkdriel: Librero. Hadrović, A. (2010). Arhitektonska fizika (2. izd.). Sarajevo: Arhitektonski fakultet. Additional: Ghirardo, D. (1996). Architecture After Modernism. London: Thames & Hudson. Jencks, C. J. (2000). Architecture 2000 and Beyond. Chichester: Wiley-Academy. Jodidio, P. (2001). New Forms – Architecture in the 1990s. Cologne: Taschen Le Corbusier, C-E. J. (1976). Towards a New Architecture. London: The Architectural Press. Radović, R. (1998). Savremena arhitektura – između stalnosti i promena ideja i oblika. Novi sad: Stylos. Ugljen-Ademović, N. (2012). Kritika - stimulans arhitektonskoj ideji. Sarajevo: Dobra knjiga. Kaltenbach, F. (Ed.). (2004). Translucent Materials: Glass, Plastics, Metals. Basel: Birkhäuser Edition Detail. Knaack, U., Klein, T., Bilow, M., & Auer, T. (2007). Façades. Principles of Construction. Basel: Birkhäuser. Phillips, D. (1971). Osvetljenje u arhitektonskom projektovanju. Beograd: Građevinska knjiga.

Code: 01.03.46	Title of the subject: DESIGNING TOURISM AND HOSPITALITY FACILITIES		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 6
Status: ELECTORIAL		**Total number of hours: 90** Lectures 30 Exercises 60	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Department of Architectural Design**		
Prerequisites:	-		
Aim (aims) of the subject:	Tourism is a significant contributor to the economic development and national income of countries that are popular tourist destinations. In the twenty-first century, the construction of tourist infrastructure and facilities is becoming increasingly relevant and expanding. This course offers students the opportunity to apply and build on the knowledge they gained in the VI semester of the first cycle of studies, specifically in the compulsory course Design 4, where they became familiar with the phenomenon of tourism and its impact on the field of construction. Students will verify their understanding through work on a specific design task related to hospitality and hotel management. The course aims to raise students' awareness of new trends in this field and to develop an understanding of the general and specific needs of potential users - tourists, hoteliers, and investors of these facilities - as well as the characteristics and needs of the local population and the selected locality. This will enable them to choose an appropriate typology and solve the task creatively. The need for new construction of tourism and catering facilities is increasing in Bosnia and Herzegovina, both in urban, and rural areas, and natural environments. The course aims to promote the sustainable development of tourism by helping students to acquire new knowledge in the areas of: • Critical consideration of the architecture of tourism and hospitality, • Functional organization of tourism and hospitality facilities, • Design methodologies, • Graphic processing and presentation of architectural projects. The course aims to help students develop the following skills: • Graphic processing and presentation of architectural projects • Public presentation of architectural projects.		

Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Thematic units cover a range of tourist and hospitality facilities and specific tourism and hospitality formations that can be found in urban and natural environments, intended for the accommodation of guests and tourists, such as: City hotels: City Passenger-Transit, Sports, Congress; Tourist hotels; Combined-Integrated hotels: City-Tourist Hotel; Golf hotels; Aparthotels; Concept hotels: Small Luxury Hotel, Art Hotel, Boutique Hotel, Spa Hotel; Spa and Health hotels: Balneological, Thalassotherapy, Climate; Youth hostels; Motels: Transit motel, Combined-Integrated Touristic-Transit motel; Tourist resorts: Apartment complexes, Hotel complexes, Resorts; Marinas; Camps.
Learning outcomes:	(Knowledge) After the course, students will: • Be able to apply the theoretical and professional knowledge acquired in the first cycle of studies, especially from the material that the student mastered through the mandatory course DESIGN 4. • Distinguish between different types of facilities for tourism and hospitality that occur within city urban areas and natural environments. (Skills) Students will be able to, in a given urban and/or naturally valuable environment, depending on specific conditions: • Evaluate which type of hotel is appropriate to design in the given environment. • Apply principles of architectural design to the design of tourism and hospitality facilities. • Apply theoretical knowledge in the field of tourism and hospitality to specific tasks. • Deliver public presentations of architectural projects. • Critically analyze projects in the field of tourism and hospitality.
Teaching methods:	Attendance at lectures and exercises, as well as preparation for the exercises, is mandatory. Lectures are organized as a combination of informative and interactive teaching. Students are required to continuously prepare for lectures and work on the exercises themselves, which include reading literature, analyzing examples from practice, and working on practical graphic projects. Throughout the semester, field trips are organized to visit locations relevant to the course. Work on the exercises is done through analysis and completion of a semester assignment that is partly supervised and partly independent. The method of work for teachers and associates with students is individualized and immediate, working with students either individually or in groups. During the semester, two phases of practical work in the form of graphic projects are taught, which students present publicly and are evaluated. In the last week of classes, final presentations of student work are organized. Students are expected to actively

	participate in lectures, exercises, and discussions during presentations of student work.
Assessment methods including grading structure [23]:	Grading for the subject will follow this structure: • Graphical/analytical works during the semester and presentations - 45% • Activity - 10% • Final graphic work - 45% The criteria for evaluating graphic works will be as follows: • Correct application of theoretical knowledge in the fields of designing tourism and hospitality facilities - 60% of the graphic work grade. • Complexity of the task - 20% of the graphic work grade. • Level of graphic presentation (use of appropriate graphic culture and techniques in practical work) - 20% of the graphic work grade.
Bibliography[24]:	Obligatory: Frey, T., & Ronstedt, M. (2014). Hotelbauten: Handbuch und Planungshilfe. Dom Publishers. Lawson, F.L. (2007). Hotels & Resorts: Planning, Design and Refurbishment. Butterworth Architecture. Penner, R.H., Adams, L., & Rutes, W. (2012). Hotel Design, Planning and Development (2nd ed.). Routledge. Skorup, J. (2020). Atomizirani hotel. Zagreb: ArTresor naklada. Laws | Federal Ministry of Environment and Tourism - Bosnia and Herzegovina (fmoit.gov.ba) Tourism and hospitality (Categorization, Legal framework/BiH). Additional: Magazines dealing with tourism and hospitality issues: The Architectural Review - AR, L'Architecture d'Aujourd'hui - AA, Techniques et Architecture - TA, Deutsche BauZeitschrift – DBZ, Deutsche Bauzeitung - DB, ORIS, ČIP, itd. Relevantne arhitektonske web stranice: ArchDaily, Dezeen, DesignBoom, Architectural Digest, Architects' Journal, etc.

[23] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.04.37	Title of the subject: SPATIAL ORGANISATION OF THE CITY – A CONCEPT		
Cycle: 2nd	Year of the study: 1st	Semester: 1st	Number of ECTS credits: 3
Status: elective		Total number of hours: 45 Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [field – urbanism and spatial planning]
Prerequisites:	none
Aim (aims) of the subject:	Studying methods and approaches to spatial organisation of the city with emphasis on planning of urban units. The goal is for a student to understand spatial components of a complex urban unit and to apply them to the conceptual plan proposal for a certain urban space.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Natural characteristics of space and connections with urban functions; characteristics of urban functions and their relationship. Specific characteristics of a city; Spatial infrastructure as a bedrock of an urban space. Topics covered in practical classes: Analysis of general plans; Analysis and proposal of a spatial development concept for a smaller urban unit.
Learning outcomes:	Knowledge: Building awareness on the cause and effect relationship between nature, human activity and state in the society; Ability to understand the system and its elements, as well as its conceptualisation; Ability to transmit abstraction into a concept of urban development. Skills: Competences:
Teaching methods:	Intellectual unveiling of spatial organisation and practical presentation by an inductive-deductive method in the approach to the theoretical problematizing of this complex task of urban planning.
Assessment methods including grading structure [25]:	Semestral assignement (40%), activity (10%) and final exemine (oral and graphical presentation of the individual/group work and a critical analysis of the results) (0–50 %).

[25] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Bibliography[26]:	Obligatory: Perišić, D. (1985). *O prostornom planiranju*. Beograd: Institut za arhitekturu i urbanizam Srbije. Piha, B. (1973). *Prostorno planiranje*. Belgrade: Službeni list SFRJ. "Planiranje i uređenje prostora" – Metodološki pristup primjeni zakona. (1977). Beograd: Zavod za urbanizam i komunalne djelatnosti Srbije. Marinović-Uzelac, A. (2001). *Prostorno planiranje*. Zagreb: Dom svijet. Marinović-Uzelac, A. (1985). *Teorija namjene površina*. Zagreb: Liber. Johnson, A. H. (1970). *Urban geography*. London: Pergamon Press. Krešić, I. (1977). *Prostorna ekonomija*. Zagreb: Informator. Additional:

[26] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.01.22.	**Title of the subject:** DEVELOPMENT OF ART ELEMENTS THROUGH REALISTIC AND ABSTRACT EXPRESS THROUGH DRAWINGS AND IMAGES		
Cycle: 2	**Year of the study:** 1	**Semester:** 1	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours:** 2 Lectures 1, Exercises 1, (+ Field work); Classes are integral – lectures and practical lessons are conducted simultaneously	
Teaching staff	Teachers and associates elected in the field to which the subject belongs - DEPARTMENT FOR SPATIAL AND GRAPHICAL VISUALISATION		
Prerequisites:	Successful completion of the obligatory two-year courses in Freehand Drawing. The course is intended for students with final grade in the course *Freehand Drawing 4* from 8 to 10. The maximum number of students per course is 15.		
Aim (aims) of the subject:	Artistic upgrade in the context of development of already acquired knowledge in the course of Freehand Drawing 1, 2, 3 and 4.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	- Introductory lecture: "Drawing" (lecture with projections and visual analysis); - Photographing the exterior of the selected building, work on the sketches; - Study drawing; - Study drawing; - Introductory lecture: "Color" (lecture with projections and visual analysis); - Photographing the interior in the selected building, work on the sketches; - Work with the color - a polychromatic approach (e.g. aquarelle/acrylic); - Work with the color - a polychromatic approach (e.g. aquarelle/acrylic); - Work with the color - a polychromatic approach (e.g. aquarelle/acrylic); - Work with the color - a polychromatic approach (e.g. aquarelle/acrylic); - Photographing details in the selected space (exterior and interior), work on the sketches;		

	- Work with the color - a polychromatic approach (e.g. aquarelle/acrylic); - An introductory lecture followed by presenting images and adequate examples from the history of art; - Work on the sketches; - A selection of sketches and work on the final task - a polychromatic approach.
Learning outcomes:	Knowledge: Raising a higher level of artistic quality of works and creative approach; Skills: Working on new materials and techniques and upgrading the quality of work; Competences: Possibility of critical review in the context of artistic issue of architectural work.
Teaching methods:	Classes are integral – lectures and practical lessons are conducted simultaneously. A certain number of classes are held on site as needed. Lectures are followed by a practical demonstration in accordance with the individual approach of the professor.
Assessment methods including grading structure [27]:	Attendance at lectures and workshops, activities that include engagement in discussions, assembling of materials and work on the sketches. The grade is assigned on the basis of practical classes and the final work. The distribution is as follows: in-class participation 30% practical classes 70%
Bibliography[28]:	Obligatory: - Arnheim, R. (1971) Umjetnost i vizuelno zapažanje (psihologija stvaralačkog gledanja), Beograd: Umetnička akademija - Arnheim, R. (1981) Umjetnost i vizuelno zapažanje (psihologija stvaralačkog gledanja) (V. Stojić, Transl.), Beograd: Univerzitet umjetnosti - Arnheim, R. (1985) Vizuelno mišljenje (jedinstvo slike i pojma) (V. Stojić, Transl.), Beograd: Univerzitet umjetnosti Additional:

[27] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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	- Bangal, B. (1999) Priručnik "Falken": Crtanje i slikanje, Beograd: Jugoslovenska knjiga - D'Amelio, J. (1964) Perspective drawing handbook, New York - Leon Amiel, Dodson, B. (1990) Keys to Drawing, Cincinnati, NorhtLight Books - Ilatovskaya, T. (1996) Master Drawings Rediscovered - Treasures from prewar German Collections, New York - Harry N. Abrams, Nicodemi, G. B. (1983) Come Disegnare Natura Morta – Paesaggio – Figurh, Milano, Ottawa: Il Ccastello

Code: 01.04.21	**Title of the subject: REDESIGNING URBAN GROUND FLOOR Open city spaces – City architecture**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 1st**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours:** 45 Lectures 15 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Understanding the direct process of design of the city space, with a careful selection of materialisation components. Approaches to designing an open space. Today, reconstructing the city space seems like a behaviour model in an interspace between the constructed and the defined urban ensembles.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction to the city space design; Typology and morphology of the city space and the open space: street, square, block, crossroads, special areas (social activities, promenades, nodal points, special forms of recreation, open unconstructed cultural and historical complexes of the city, parks, fountains, monumental places); Design and functionality of urban street furniture – an introduction to design of the pedestrian level; A critical overview to the use of selective construction materials (functional, aesthetic, ambiental and environmental); Constructive consequences of the reconstruction of urban ground floor in objects; Elaboration of aesthetical components (composition, the culture of line, traditional matrix); Technological and psychological components in designing urban furniture; Visual communications and their micro correlation in the urban ground floor; Spatial and morphological sequences – urban space perception phenomena; Comparative analysis of the current examples from practice, in accordance with the defined criteria.
Learning outcomes:	Knowledge: A critical overview to the assigned spatial scope; Skills: Designing a detail of an unconstructed area in the city (square, piazzetta, city space, open space); Competences: City space visualisation – details.
Teaching methods:	Theoretical part (lectures and individual consultations) and practical part (practical classes – elaboration of details in

	reshaping the selected spatial scope of the urban ground floor);
Assessment methods including grading structure [29]:	Individual work at practical classes, discussion upon presentation of the assignment, final written exam for students who fail to achieve the required minimum of points during the semester.
Bibliography[30]:	Obligatory: Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Gehl, J. i Gemzoe, L, New city spaces, Danish Architectural Press, Copenhagen, 2001 Halprin, L, Gradovi, Agora, Građevinska knjiga, Beograd, 1973 Kahn, H, Slijedećih 200 godina, (1776-1976-2076), Stvarnost, Zagreb, 1976 Rossi, A, Arhitektura grada, Agora, Građevinska knjiga, Beograd, 1996 Rossi, A, The Architecture of the City, MIT, Boston, Massachusetts, 1997 Taylor, L, Urban Open Space, Academy Edition, London, 1981 Uhlig K, Pedestrian Areas - from Malls to Complete Networks, Academy Edition, London, 1979 Venturi, R, Braun, D. S. i Ajzenur S, Pouke Las Vegasa, Agora, Građevinska knjiga, Beograd, 1988 Zite, K, Umjetničko oblikovanje gradova, Agora, Građevinska knjiga, Beograd, 1967 Additional: Other literature recommended in accordance with the narrow thematic determinants of the elective group.

[29] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.03.51	**Title of the subject: CONTEMPORARY SPATIAL CONCEPTS, DESIGN AND PROTOTYPE**		
Cycle: 2nd	**Year: 1st**	**Semester: 1st**	**Number of ECTS credits: 6**
Status: Elective		**Total number of hours: 90** Lectures 45 Exercises 45 Field work / site visits	
Teaching staff	**Teachers and associates elected in the field/Department of architectural design / Department of architectural construction and building technology / Guest lecturers**		
Prerequisites:	-		
Aim (aims) of the subject:	Promoting a comprehensive approach to design through connecting levels of architectural design, interior design and products, and creating models and prototypes. Introducing students to a conceptual approach in designing modular and prefabricated units with the incorporated "smart" technology and focus on energy efficiency; Raising ecological awareness through the use of ecological and recycled materials and components in construction of objects, interiors and design; Low-energy housing objects and technological monitoring; The concept of creating individual, polyvalent and standardized small-scale spaces; Structural aspect of design of modular objects; Composition principles of modular architectural design and urban layout; Designing furniture elements and different products for the purpose of achieving smart housing and energy sustainability; Modular design and serial production – a life-long changeability of the living space; Raising awareness on energy efficiency in architecture, interior and furniture design.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introductory lecture; Historical overview on the prefabrication in architecture, interior and furniture design; A visiting lecture – industrial sector; Field trips (visits to the factories for production of prefab housing and prototype production workshops); Functional, economic and technological factors of designing modular prefabricated objects; Types of modular prefabricated objects according to construction and materialisation; Technology: modular systems and prefabrication levels; The process: project, production, installation; Structural analysis of modular objects: systems, modules, elements; Typical details of construction; Flexibility and lifelong changeability of spatial		

	functions; Energy efficiency of modular objects; Integration of "smart" technology systems into space and interior equipment; Digital tools (BIM) application in designing modular objects; An integrated approach to architecture, interior and furniture design.
Learning outcomes:	Knowledge: Introduction of the EE and "low-carbon" approach in polyvalent modular buildings design; Understanding the significance of creating a model/prototype of sustainable, accessible and adaptable spaces; Research, critical assessment and evaluation of the possibilities of application of the typology of modular buildings – both as permanent and temporal installations with regards to the urgency of their use (natural disasters, earthquakes, floods, landslides, etc.); Skills: Understanding the potentials of multifunctional use and positioning of modular units, as well as their integration into different urban and rural surroundings (unused flat roofs in urban centres, etc.); In practical classes, the students plan, prepare and develop their own projects, with a possibility of constructing a full-scale prototype of modular buildings on a selected location. Competences: The students will demonstrate the ability to understand and interpret the design brief as well as to assess the functional, structural and design aspects of modular, prefabricated buildings, in order to ultimately develop their own design projects.
Teaching methods:	Lectures – multimedia presentations and practical classes, associated with the course thematic units. The practical section that consists of studio work and project development of sustainable multifunctional modular buildings, study visits, construction of a model and, possibly, a full scale prototype.
Assessment methods including grading structure [31]:	The grade is assigned through the in-semester project development of the assignment in three phases (50%), final project delivery (40%) and student participation (up to 10%).
Bibliography[32]:	Obligatory:

[31] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[32] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Schneiderman Deborah, *Inside Prefab:The Ready-Made Interior,*2012;Bell Jonathan, *21 Century Houses*, 2006; Vidiella Alex, *Green Living: Sustainable Housing,* 2009; Smith Ryan, *Prefab Architecture – a guide to modular design and construction,* 2010; Additional: Davies Colin: *The Prefabricated Home,* 2005; Minguet María Josep: *Contemporary Green Prefab: Industrialized & Kit Architecture*,2012; Julie Torres Moskovit, *The Greenest Home: Superinsulated and Passive House Design*, 2013.

Code of subject: 01.02.25.	Name of subject: VERNACULAR ARCHITECTURE		
Cycle: 2nd	Year: 1st	Semester: 1st	Number of ETCS credits: 3
Status: ELECTIVE		Total number of hours: 30 Lectures 15 Exeminiation 15	

Participants	**Teachers and associates elected in the domain to which the subject belongs** Field of theory and history of architecture and preservation of cultural heritage
Pre-requisite for enrollment	-
Goal (objectives) of the course:	Historical context: The area of vernacular architecture is specific because it moves within a historical framework that covers the space from the period of the prehistory to the present. Theoretical context: acquiring knowledge about methods of research, analysis, valorization, and protection and restoration - conservation and restoration around the world on examples of architectural heritage. Practical Context: Students are introduced to the architecture that has responded to numerous questions of nature that "people built for themselves", writing a seminar paper that deals with materialization, construction, details, of course, the scale, the proportion I volume, which is the analysis of ambient I its values.
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	Writing scientific work and quoting 3 weeks presenting world examples of vernacular architecture Selection of tasks Methodological approach (research, analysis, valorization of historical structures, determination of protection boundaries and contact zones; Determining the causes of degradation; Analysis and valorization of specific world and domestic changes; Defining the level of intervention and determining the guidelines for preservation and optimal presentation and revitalization of heritage; Methods of protection and economics of the cultural property; Preventive protection methods before restoration. Individual work with students Presentation of completed research before final exam.

Learning outcomes:	**Knowledge:** Understanding the phenomenon of vernacularity allows students to connect specific points that are tradition, bioclimatic, ecology and sustainability. All this is sublimated in the veracity of one object, and that level of knowledge in all fields is integrated in the acquisition of knowledge in this subject. They also gain knowledge of numerous world traditions. **Skills:** Reasoning and valorizing as well as adopting an analytical method. Observation of vernacular architecture and bioclimatic architecture, to the extent that it is possible to perceive and evaluate an individual phenomenon or phenomenon on the basis of individual tasks. **Competences:** Students develop the ability to perceive stylistic characteristics already learned, but through scientific and research work they are enabled to identify and reason, which will later be used for all other and different analyzes of heritage that we consider as tradition.
Methods of teaching:	Lectures with projections and comparison with different methods and techniques. Work under supervision - a project.
Knowledge testing methods with a rating structure[33]:	Seminar papers / presentations + 45-90% Activity - 0-10% Final exam - 45-90%
Literature[34]:	**Required:** Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh Akšamija L., Arhitektura svrhe, . Arhitektonski fakultet, Sarajevo, 2004. Chabbouh Akšamija L., Šabić L., Tradicionalna travnička kuća, Zavičajni muzej u Travniku, Arhitektonski fakultet, Sarajevo, 2018. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015. Hrasnica, M., Arhitekt: Josip Pospišil - život i djelo, Sarajevo, Arhitektonski fakultet, 2003.

[33] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[34]The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

	Husedžinović , S, Valorizacija islamske sakralne arhiekture Banja Luke s analizom njenog rušenja kroz povijest (neobjavljena doktorska disertacija), Zagreb, 1997. Krzović, I., Arhitektura BiH 1878-1918, Sarajevo, Umjetnička galerija BiH, 1987. Kurto, N., BiH, razvoj bosanskog sloga, Sarajevo, Međunarodni centar za mir, 1998. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Redžić, H., Islamska umjetnost (Umjetnost na tlu Jugoslavije), Beograd, Zagreb, Mostar, IZJ, 1975. Redžić, H., Studije o islamskoj arhiektonskoj baštini, Sarajevo, Svjetlost, 1983. Sanković Simičić V., Revitalizacija graditeljske baštine, NNP naša riječ d.o.o., Sarajevo, 2000. Schuller, M., Building Archaeology, München, ICOMOS, 2002. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. Zevi, L., Il Manuale del Resauro Architettonico, Mancosu editore, Roma, 2002. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.04.43	Title of the subject: THE 21ST CENTURY CITY		
Cycle: 2nd	Year of the study:1st	Semester: 2nd	Number of ECTS credits: 3
Status: Elective		Total number of hours: 45 Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs**
Prerequisites:	Results achieved at the department subjects, readiness for additional engagement
Aim (aims) of the subject:	Understanding principles of post-industrial era city functioning, with all spatial, sociological and economical burden inherited through the period from the formation of the city until today. Understanding the terms such as the "resilient city", "smart city", "green/blue city", etc., as well as contemporary approaches in solving of the accumulated problems of the European cities.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1-3 City and its planned development; 4-6 The issues related to functioning of a city in the 21st century; 7-10 contemporary trends in city management; 11-15 Strategies of the European cities' development
Learning outcomes:	Knowledge: Adoption of theoretical knowledge of the relationship between man and the city in the modern age Skills: Understanding space / economy / ecology / technology relationships and the importance of properly planning and using these resources and tools in terms of the proper functioning of the city in relation to man, ie the acceptance of social infrastructure as a tool for achieving a balanced development of the city. Competencies: Involving in the teaching of the knowledge of experience from different segments and angles of

	functioning and use of the city, an introdisciplinary approach in the thinking of the city
Teaching methods:	Lectures and practical classes are obligatory and are organised as a combination of informative and interactive teaching. Apart from active participation in the teaching process, each student should partake in a team, preparing the thematic assignment. Students present their results in the pptx format in the form of discussion.
Assessment methods including grading structure [35]:	Semestral assignement (40%), activity (10%) and final exemine (oral and graphical presentation of the individual/group work and a critical analysis of the results) (0–50 %)
Bibliography[36]:	Obligatory: Benevolo, L. (2004). Grad u istoriji Evrope. Belgrade: Clio. Berelowitz, L. (2005). Dream City – Vancuver and the Global Imagination. Vancuver: Douglas & McIntyre Ltd. Elin, N. (2006). Integral urbanism. New York, London: Routledge Taylor & Francis group. Elin, N. (2004). Postmoderni urbanizam. Beograd: Orion art. Jenks, M. (2000). The Compact City, a Sustainable Urban Form? London-NY: E&FN Spoon Press. Radović, R. (1976). Forma grada. Beograd: Agora - Građevinska knjiga. Rudlin, D., & Falk, N. (1999). Building the 21th century home – The sustainable urban neighbourhood. Oxford: Architectural Press. Stupar, A. (2009). Grad globalizacije – izazovi, transformacije, simboli. Beograd: Orion art. Vaništa Lazarević, E. (2003). Obnova gradova u novom milenijumu (Vol. I). Beograd: Classic map studio. Vresk, M. (2002). Grad i urbanizacija. Zagreb: Školska knjiga. Additional: Development strategies of the city and municipalities, Literature in accordance with the selected theme of semester work

[35] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[36] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Course code: 01.03.64	Course title: ARCHITECTURE AND HEALTH 1		
Cycle: 2	Year: 1	Semester: 1	ECTS points: 3
Course type: Elective		Total number of hours: 30h Lectures: 15 h Exercises: 15 h	
Teaching participants	Teachers and associates selected in the field of the study/subject; relevant teachers from other faculties and / or experts (upon invitation)		
Enrolment requirements:	/		
Course objective(s):	The objective of the course is to familiarize students with a wide range of factors that affect public health in urban areas (scale of city, community / neighbourhood and buildings). The pace of urbanization results in a built and social context that adversely affects humans, increasing exposure to various urban toxins.		
Thematic units: (if necessary, the weekly performance plan can be determined by taking into account the specificities of the organizational units)	The implementation of the coursework is based on an analysis of the factors that influence the health of the urban environment (a scale of community / neighbourhood and buildings), as well as how that environment can respond to these increased challenges. 1. Overview and context of architecture and health 2. Social and ethical responsibility of architects 3. Identifying and evaluating architectural principles 4. Methodology for solving problems in managing complex systems 5. Examples of good and bad practice 6. Collection and analysis of data on the quality of external and internal space created by human construction interventions; 7. Interaction between relevant stakeholders		
Learning outcomes:	**Knowledge:** Students will be familiarizes with the overview and context of health, architecture and the environment. General knowledge of the actual state of the built environment, ie. the causes and consequences of such a condition for human health. Review of legal frameworks in this area, recommendations and guidelines in the process of designing and constructing buildings; and contemporary tendencies in creating quality living spaces. **Skills:** Understanding the concepts of health, architecture		

	and the environment in a social and built environment. Understanding the value of an interdisciplinary and multidisciplinary approach to problem solving to achieve a healthy urban environment. **Competences:** Ability to manage information through critical thinking, analysis and presentation of own conclusions.
Teaching methods:	Lectures & Multimedia; Seminar work - essay writing;
Knowledge assessment methods with grading structure[37]:	Students' knowledge is assessed on the basis of a successfully completed semester assignment - essay (60% of the total grade); oral presentation (30% of the total grade) and reports of visits to different stakeholders (10% of the total grade)
Literature[38]:	Obligatory: - Barton, H., Thompson, S., Burgess, S., & Grant, M. (Eds.). (2015). *The Routledge Handbook of Planning for Health and Well-Being.* New York, NY: Routledge - Burdett, R., & Rode, P. (2018). (Eds). *Shaping cities in an urban age*. Berlin: Phaidon. - Leeuw, E. de., & Simos, J. (Eds.). (2017). *Healthy cities: the theory, policy, and practice of value-based urban planning*. New York, NY: Springer New York. Additional: - Barton, H., Mitcham, C., & Tsourou, C. (2003). *Healthy urban planning in practice: experience of European cities: report of the Who City Action Group on Healthy Urban Planning*. Copenhagen: WHO Regional Office for Europe. - Bijedić, Dž. (2012). *Arhitektura, Holizam umjesto optimalizacije, Integralni pristup u arhitektonskom stvaralaštvu.* Sarajevo: Univerzitet u Sarajevu

[37] The points structure and the scoring criterion for each subject are determined by the organizational unit council before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[38] The Senate of the higher education institution as an institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which it prepares and passes the exam by a special decision, which is obligatory to publish on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Sarajevo Canton

SYLLABUS FOR THE FIRST YEAR, 2nd SEMESTER

Code: 01.03.20	**Title of the subject: INTERIOR ARCHITECTURE AND DESIGN 3**		
Cycle: 2nd	**Year: 1st**	**Semester: 2nd**	**Number of ECTS credits: 3**
Status: Obligatory		**Total number of hours: 45** Lectures 15 Exercises 30 Field work	

Teaching staff	Teachers and associates elected in the field/Department of architectural design
Prerequisites:	-
Aim (aims) of the subject:	Introduction to the field of furniture design, placing a special emphasis to the modern movement of the 20th century and design tendencies the early 21st century. Furniture case studies include analysis from the initial sketch to a prototype- Detailed guidelines of the complex design process are presented, accompanied with practical explanations of the production process.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Roots of design; Elements of form; Role of the designer; Designing process and research procedure; from an idea to a prototype; Field work; Material application and construction of furniture elements; Ergonomics and anthropometrics in design; Production process and design; Modern movement and the furniture design; Structural and technological perspective in furniture design; New-Decorative approach to furniture design; Modern styles and contemporary movements.
Learning outcomes:	Knowledge: Acquiring theoretical knowledge on the most important achievements in the industrial production of furniture, its basic classification, as well as positive and negative aspects of this field. Skills: Practical classes encompass the introduction to ergonomics, anthropometrics, material selection and application in the design process through a direct engagement of students in practical development of certain furniture elements. In the practical classes, the students will learn to plan, prepare and perform all the processes, procedures and techniques of designing public interior spaces, adaptive reuse and remodelling of the existing spaces for the original or new public functions. Competences:

	The course focuses on collaboration with the real sector and wood industry professionals, enabling the students to obtain practical experience in planning, preparing and performing all the processes, procedures and techniques of designing public interior spaces and furniture design.
Teaching methods:	Lectures – multimedia presentations and practical classes that lean on the thematic units. Practical classes entail a comprehensive task of designing furniture elements and a project of an existing public space remodelling. The curriculum also entails active interaction with furniture industry.
Assessment methods including grading structure [39]:	Grade is obtained from an in-semester project assignment (60%), evaluation of theoretical knowledge through one in-semester test or a final exam (30%), as well as participation of students (up to 10%). In order to obtain a passing grade, the students are obliged to fulfil the minimum requirements in the assessment of both theoretical knowledge assessment and in-semester assignment.
Bibliography[40]:	Obligatory: De Chiara Joseph, Panero Julius, Zelnik Martin,*Time-Saver Standards for Interior Design and Space Planning*, 2001; Dorfles Gillo, *Uvod u dizajn*, 1994; Salihović Erdin, *Interakcija dizajna namještaja i potreba stvaranja bosanskohercegovačkog branda-imena*, 2012; Salihović Erdin, *Povijest enterijera i dizajna namještaja na razmeđu manualnog i industrijskog koncepta: Od Arts and Craftsa do Art Decoa,* 2016*;* Noblet de Jocelyn, *Dizajn, Pokret i šestar*, 1999.; Raizman David, *History of Modern Design: Graphics and Products Since the Industrial Revolution*, 2003; Additional: Sparke Penny, *A Century of Design: Design Pioneers of the 20th Century*, 1998; Fiell Charlotte & Peter, *Designing the 21-st century*;Dormer Peter, *Design since 1945*, 2005; Abercrombie Stanley & Whiton Sherrill, *Interijeri, Arhitektura, Dizajn-Povijesni pregled*, 2016;

[39] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.02.10	Title of the subject: HISTORY OF ARCHITECTURE IN BOSNIA AND HERZEGOVINA		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 2
Status: OBLIGATORY		**Total number of hours: 30** **Lectures 30**	

Teaching staff	**Teachers and associates elected at** Department for Theory and History of Architecture and Protection of Architectural Heritage
Prerequisites:	-
Aim (aims) of the subject:	1. Introduction of students with the development of BiH architecture from prehistory to modern architecture. 2. Essential knowledge of the layers and interactions of urban and architectural forms within the territory of Bosnia and Herzegovina. Connecting architectural expressions with determinants of the natural, cultural and material context and heritage.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction; Prehistory, the Butmir Culture; The Ancient period (Mogorjelo, Ilidža); Medieval towns, The stećak monument (Bobovac, Vranduk, Tešanj, Travnik, Jajce); The Ottoman period – public architecture (the Ottoman hans, hamams and mosques); The Ottoman period – housing architecture (regional characteristics); Bridges (Višegrad, Mostar, the Arslanagić Family Bridge in Trebinje, Sarajevo – Kozja Ćuprija, the Žepa River Bridge, etc.); Austro-Hungarian period (Neo-Renaissance, Neo-Gothic, Neo-Baroque, Secession); Austro-Hungarian Bosnian style of architecture, orientalism (mixing of styles, local and oriental); The 1918 – 1929 period; Architecture between two world wars; Modern, socialist housing architecture, Olympic Games objects; Notable architects of Bosnia and Herzegovina: J. Neidhart, I. Štraus, N. Ugljen; The Yugoslav People's Liberation War monuments (Sutjeska, Kozara, architects Bogdanović, Džamonja); Reconstruction of BiH after the war; Monuments; Contemporary architecture: 1995 – 2020 – urbanism and architecture, challenges of the transitional period, shopping centres; Concluding remarks.
Learning outcomes:	Knowledge: Knowledge of the historical periods and development of architecture in Bosnia and Herzegovina, as well as the connection between phenomena, causes and material manifestations in architecture.

	Skills: Understanding, identifying, analysing the encountered spatial situations, articulation of the problem of action within the multi-layer urban heritage in Bosnia and Herzegovina Competencies: Knowledge of the development of BiH architecture, the possibility of researching and sublimating new information, and the use of knowledge in designing objects in the future. With the understanding of the context, space and time in which the structure is created, students acquire the key competences for designing projects in Bosnia and Herzegovina. This is further elaborated through obligatory and elective courses.
Teaching methods:	Comparative lectures with projections and theoretical presentations of the flows of architectural creation in contemporary expression and regional characteristics, as well as certain representatives of architecture.
Assessment methods including grading structure [41]:	Grade structure: Exam: 2 theoretical exams 90% of points (2 x 45) The minimum number of points is 25. Activity: (discussions, presentations) 5 -10% (points). Students must earn a minimum of points from each segment.
Bibliography[42]:	Obligatory: Andrejević, A, Islamska monumentalna umjetnost XVI vijeka, Beograd, 1984 Benac-Basler Kulturna istorija BiH. Sarajevo, 1984 Becirbegovic, M, Džamije sa drvenom munarom, Sarajevo, 1974 Chabbouh Lemja A, Šabić L Tradicionalna travnička kuća, AFS, Travnik/Sarajevo 2018 Čelić, Dz, Jadric, R, Redžić, H, Restauracija i revitalizacija sarajevske čarsije, Naše starine 12. Sarajevo, 1978 Eren, Pašić A, Idrizbegović A, Restoration of Mosques, IRCICA, Istanbul,2013 Grabrijan, D, Neidhardt, J, Arhitektura Bosne i put u sauremeno. Ljubljana 1957 Krzović, I, Arhitektura BiH 1878-1918, Sarajevo, Umjetnička galerija BiH, 1987 Kurto, N., BiH, razvoj bosanskog sloga, Sarajevo, Međunarodni centar za mir, 1998

[41] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[42] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Pašić, A, Islamska Arhitektura BiH, IRCICA, Istanbul, 1994. Redžić, H., Islamska umjetnost (Umjetnost na tlu Jugoslavije), Beograd, Zagreb, Mostar, IZJ, 1975 Redžić, H., Studije o islamskoj arhitektonskoj baštini, Sarajevo, Svjetlost, 1983 + prezentacije i skripta dostavljena od strane nastavnika Additional: Prelog, M, Povijest Bosne u doba Osmanlijske vlade 1464-1739, Sarajevo, 1910 Vego M, Naselja srednjovjekovne bosanske države, Svjetlost, Sarajevo, 1959

Code of subject: 01.02.09.	**Name of subject: METHODOLOGY AND PHENOMENOLOGY OF AN ACTIVE APPROACH TO ARCHITECTURAL HERITAGE**		
Cycle : 2nd	**Year of study: 1nd**	**Semester: 2nd**	**Number of ECTS credits:** 5
Status: OBLİGATORY		**Total number of hours: 60** **Lectures 30** **Exercises 30** **Seminar work**	

Participants	**Teachers and associates elected in the field to which the subject belongs** of theory and history of architecture and preservation of cultural heritage
Pre-requisite for enrollment:	Approved graphic work from the subject protection of architectural heritage.
Goal (objectives) of the course:	Historical Context: Topics of work moving within the architectural heritage of Bosnia and Herzegovina, and therefore handle the period from the Middle Ages to the socialist period. Theoretical context: Acquiring knowledge on the active protection of cultural and historical heritage, and the most appropriate method of physical intervention on the architectural heritage. Practical context: By the end of this paper, a wide area of ZGN is perceived, which enables further work on this scientific area. Getting acquainted with the basic elements of the science of aesthetics and its component in architecture makes it possible to build an attitude, along with the category of architectural criticism, by which this subject deals.
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	1. Information, literature, mode 2. Ambient parameters + Authenticity 3. Continuity - discontinuity 4. Application of protection methods from the aspect of critical review of existing + Aesthetics as a scientific discipline, valorization of architectural work 5. Phenomenology relevant for the preservation of the architectural heritage: originality, authenticity, authenticity and identity + Examining architectural objects or entities, comparison of old-new 6. Phenomenology relevant for the preservation of the architectural heritage: originality, authenticity, indigenity and identity 7. Space parameters + Defining the context through space and time 8. Restoration as a creative act? + making seminar work 9. Conceptualism 10. Reversibility and revaluation

	11. Total reconstruction 12. Integration old-new 13. Methodological approach to future construction
Exercises - practical work (weekend exercise plan)	1. Management plan I feasibility studies 2. Project program 3. Variant solutions of brand and volume 4. Development of the concept of functional zoning 5. Three variant solutions of the concept 6. Three variant facade solutions 7. Examination 8. Elaboration of the adopted variant solution 9. Characteristic basics 10. Cut off 11. Various facade solutions 12. 3D object model 13. 3D model of the building in the ambient 14. Aesthetics and criticism 15. Aesthetics and criticism
Learning outcomes:	**Knowledge: S**tudents use their already acquired knowledge to design the last phase of the methodological process of active protection. Expanding knowledge refers to phenomenological topics, which the student learns the methods of physicality study and SWOT analysis, as well as the intervention of the new in the old. **Skills:** Ability to act in ambient units and on objects that have been treated as traditional architectural heritage. Use of methods of security profession and way of understanding and finding in ambient units. **Competences:** Ability to work on the protection of the architectural heritage Training the student for methodologically correct and creative work within all segments of the concept of architectural heritage (individual objects, architectural units, archaeological sites, integral heritage. Possibility of independent analysis and valorisation of architectural work and creation of objective architectural criticism. In this course, students learn about aesthetics and criticism in architecture, where they are introduced to a methodological procedure for the analysis of aesthetic values.
Methods of teaching	Lectures with projections and comparison with different methods and techniques. Work on exercises with an appropriately chosen theme
Knowledge testing methods with	Semesteral work - 45-90% Activity - 0-10% Final exam - 55-90% Partial knowledge tests after the 6th and 13th lectures and section of the graphic work in the form of a clause.

a rating structure[43]:	
Literature[44]:	**Required**: Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh-Akšamija, L., Arhitektura svrhe, Acta architecture et urbanistica, 2004 Chabbouh Akšamija L., Šabić L., Tradicionalna travnička kuća, Zavičajni muzej u Travniku, Arhitektonski fakultet, Sarajevo, 2018. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., Zaštita graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Pane, R., Citta antiche edilizia nuova, Edizione Scientifiche Italiane, Napoli, 1959. Protection et animation culturelle des monuments, sites et villes historiques en Europe, par Commission allemande pour l'Unesco, 1980. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. Zevi, L., Il Manuale del Resauro Architettonico, Mancosu editore, Roma, 2002. Arnheim, R., Umjetnost i vizualno opažanje, Univerzitet umjetnosti u Beogradu, 1981. Baird, G., Criticality and Its Discontents, Harvard Design Magazine, 2004. Focht, I., Uvod u estetiku, Zavod za izdavanje udžbenika, Sarajevo, 1972. Frye, N., Anatomy of Criticism, Princeton Univ.Press, 1957. Hays, K. M., Critical Architecture: Between Culture and Form, Perspecta 21: The Yale Architectural Journal, 1984. http://virtual.arhitekt.hr/II/Lists/Kolegiji/DispForm.aspx?ID=71 http://www.uq.edu.au/atch/index.html?page=123664&pid=122828 UNIVERSITY OF QUEENSLAND, CENTRE FOR ARCHITECTURE, THEORY, CRITISISM, HISTORY Spector,T., The Ethical Architect, Princetone Architectural Press, NY, 2001.

[43] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[44]The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

	Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.03.14	**Title of the subject: ARCHITECTURAL DESIGN 10 – Agricultural Buildings**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 2
Status: Obligatory		**Total number of hours: 30 (15+15)** 15 Lectures 14 Exercises 1 Field work	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs, Department of architectural design**		
Prerequisites:	none		
Aim (aims) of the subject:	The aim of the subject is to introduce students to the issues that concern studying agricultural objects, as well as their characteristics with regards to the location, function and technological process. By applying certain constructive systems, emphasizing characteristic architectural-design components and elements, and humanization of the constructed area, emphasis on the characteristic architectural selection of spatial structures applicable to objects of this kind is clarified. Candidates are presented with the philosophy of construction of these objects in macro and micro surrounding, as well as their interactions with the constructed and natural environment. Students are also enabled to master the methodology of designing the objects if this kind in practice.		
Content:	1. Division of agricultural objects; 2. Agricultural complexes – principles and examples of solutions 3. Division of objects for housing of cattle 4. Tie stalls; 5. Kinds of stall bedding and tethers 6. Free stalls; 7. Stalls for calves and other juvenile cattle 8. Automatic milking systems and dairy storerooms 9. Stationaries 10. Silage and silos 11. Feeding of cows (kinds of feeders, ways of feeding; transportation of food…) 12. Manure management of stalls 13. Materialization of stalls; 14. Accompanying objects (mechanization canopies; warehouses, weighbridge, …) 15. Field work (visiting a representative object).		

Learning outcomes:	**Knowledge:** Acquiring specific knowledge of agricultural buildings and their design. **Skills:** Mastering skills of practical application of specific knowledge of designing agricultural building. **Competences:** Designing agricultural buildings in practice
Teaching methods:	**Ex-cathedra lectures;** **practical classes – graphical presentation.** **visiting representative building**
Assessment methods including grading structure [45]:	Partial exams, two during semester 16% + 16%, 64% graphical assignment, Lecture Activity and attendance 4% and / or integral/final exam 32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[46]:	Obligatory: 1. Simonović, Đorđe: ***Poljoprivredne zgrade i kompleksi***, Beograd, Građevinska knjiga, 1986; 2. Bilalić, Sabrija: ***Poljoprivredni objekti,*** skripta Additional: 3. Zeremski, Damjan i Milan Tošić: ***Siliranje i silaža u stolarstvu***, Sarajevo, -, 1989; 4. Dozet, Natalija: ***Proizvodnja i primarna obrada mlijeka***, Sarajevo, NIRO Zadrugar, 1983; 5. Amon, Marko i Srečko Koritnik: ***Gradnja i preureditev hlevovo***, Ljubljana, -, 1978; 6. Zarić, Jovan: ***Silosi za stočnu krmu***, Sarajevo, Arhitektonsk-urbanistički fakultet u Sarajevu i Institut za arhitekturu i urbanizam u Sarajevu, 1968; 7. Kojić, Branislav i Đorđe Simonović: ***Poljoprivredna arhitektura,*** Beograd, Građevinska knjiga, 1964; 8. Simonović, R. Đorđe: ***Staje za hladno slobodno odgajivanje***, Beograd, Zadružna knjiga, 1959; 9. Kojić, Đ. Branislav: ***Poljoprivredne zgrade***, Beograd, Građevinska knjiga, 1962;

[45] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[46] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	10. Kreger, Rado: ***Hiša na vasi***, Beograd, Ljubljana, Naš dom – Gradbena strokovna založba v Ljubljani, 1946; 11. Bartussek, Helmut; Lens Vitus; ***Ofner-Schrőck i dr: Rinderstallbau***, Graz-Stuttgart, Leopold Stocker Verlag, 2008.

Code: 01.04.07	**Title of the subject: URBAN TRANSFORMATIONS**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 2
Status: Obligatory		**Total number of hours:** 15 Lectures 15	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning		
Prerequisites:	None.		
Aim (aims) of the subject:	Observing and analysing phenomena, causes and transformation processes in urban matrices of physical structures, envisioned realistically and for an expected time period; Observing the possibilities of functional, structural and aesthetical transformations of the city, as well as possibilities of redesigning the human environment, both constructed and non-constructed;		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction (Urban context and urban transformations – Interpreting the terms; Urban morphology – City architecture transformation indicator; The current urban-architectural practice with regards to the transformation of city architecture; Approaches to urban-architectural treatment of the urban context); Urban context – Spatial framework of transformations; Urban environment system transformation – Redesign of the city; What is the urban-structural transformation?; A short overview of urban redesign developmental periods; Right to preserve a mental image; Shapes of urban transformations (of city redesign); The location theory (Analysis of the function; Limits of the urban space transformational span and bonification; People's mental points; Surveying – sample – interview); Social and spatial fragmentation of a contemporary city (the contemporary city fragmentation: causes and consequences; Fragmentation and urban design; Fragmentation of the city and public area transformation; Future role of an urbanist/designer – a Recommendation); Temporality of urban transformations – Commercial.		
Learning outcomes:	Knowledge: Understanding issues and goals of urban transformations; Skills: Understanding issues of social changes, modernisation and reshaping, human behaviour, customs,		

	integral and functional changes in the city, aesthetical needs; Competences: Understanding the limits and context of transformations and learning about the ways of development and implementation of adequate spatial-plan regulation;
Teaching methods:	Lectures and individual consultations; Theoretical elaboration and comments of the inherited and the current template of the urban matrix concepts, observed in light of real needs for urban transformations for the purpose of improving the quality of living;
Assessment methods including grading structure [47]:	Students are evaluated through in-semester tests (two tests during the semester - each svaki 27,5-47,5%) and/or final exam (55-95%); The final grade consists of students activities in the classroom (5%), grades achieved at the in-semestral tests or final exam and the essay grade.
Bibliography[48]:	Obligatory: Čakarić, J, Urbane transformacije – Skripta, Arhitektonski fakultet u Sarajevu, 2013 Bečić, E, Urbani fenomeni kontekstualizacije, Blicdruk, Sarajevo, 2010 Brolin, C. B, Arhitektura u kontekstu, Građevinska knjiga, Beograd, 1988 Castex, J, Depaule, J. C. i Panerai, P, Urbane forme, Građevinska knjiga, Beograd, 2002 Cook, P, The City, Seen as a Garden of Ideas, Peter Cook and The Monacelli Press, Inc., New York, 2003 Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Čaldarović, O, Urbano društvo na početku 21. stoljeća, Naklada Jesenski i Turk, Zagreb, 2011 Elin, N, Postmoderni urbanizam, Orion art, Beograd, 2002 Norber-Schulz, C, Stanovanje. Stanište, urbani prostor, kuća, Građevinska knjiga, Beograd, 1990 Rossi, A, Arhitektura grada, DIP "Građevinska knjiga" i PP "Premis", Beograd, 2002 Vujović, S i Petrović, M, Urbana sociologija, Zavod za udžbenike i nastavna sredstva, Beograd, 2005 Additional: Horvat, S, Znakovi postmodernog grada, Naklada Jesenski i Turk, Zagreb, 2007

[47] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[48] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Krier, R, Gradski prostor u teoriji i praksi, Građevinska knjiga, Beograd, 1999 Fyfe, R. N, Prizori ulice, Clio, Beograd, 2002 Kolešnik, Lj, Umjetničko djelo kao društvena činjenica, Institut za povijest umjetnosti, Zagreb, 2005 Low, M. S, Promišljanje grada, Naklada Jesenski i Turk, Zagreb, 2006 Mumford, L, Kultura gradova, Mediterran Publishing, Novi Sad, 2010 Norber-Schulz, C, Intencije u arhitekturi, Naklada Jesenski i Turk, Zagreb, 2009

Code: 01.04.11	Title of the subject: URBAN PLANNING 2		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 1
Status: OBLIGATORY		**Total number of hours: 30** Lectures. 15 Exercises: 15	

Teaching staff	Teachers and associates n the field urbanism and spatial planning
Prerequisites:	none
Aim (aims) of the subject:	(1) transdisciplinary approach in urban planning; contemporary appearances and processes in the city; definition and identification of urban conflicts and its manifestation on physical and social structure; the role of city authorities, planners and community in the process of decision making, and its consequences on building or relativization of urban meaning; (2) development of critical notion and scientific-research knowledge of urban analyze and synthesis.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	(1) terminology, urban form, appearances and processes in urban planning; research assignment (explanation of the task, method, and literature review writing style), (2) urban theory in Bosnia and Herzegovina; city as complex and dynamic system - whose is the city?, (3) measuring urban form (measurable, hard to measure and non measurable), (4) urban interests and conflicts), (5) ideal city of capitalism and socialism, (6) urbanization cycles; urban sprawl, growth and shrinking, (7) urban decay and renewal; compact city; urban renaissance; urban decau in BiH and third generation of urban plans, (8) urban charters, (9) assignment (progress evaluation), (10) urban charters (II part), (11) spatial and social fragmentation (gentrification, gated communities), (12) legislation, documents and deregulation, (13) visible and invisible consequences of urban processes; changes of planning documents, land-use change, (14) urban planning ethics; property rights, changes and perceptions, (15) privatization of construction land; illegal developments.
Learning outcomes:	Knowledge: urban appearances and processes, its generators and urban consequences; Critical awareness on the relationship between the current flows in urbanism and the past;

	Skills: Ability to proactively adjust or resist the changing situations; decision-making skills; Ability to recognize and appropriately use urban and architectural theories, concepts, paradigms and principles; Ability to critically use the Internet as means of communication and sources of information; Personal and social skills of expression and communication in oral and written form, as well as by a short presentation/description; Ability to abstract and present key elements and relations; Ability to write in one's native language, correctly using literature related to urbanism; Ability to cite sources correctly. Competences: critical analysis of the goals and urban development practice; interpretation of urban processes and solutions proposal.
Teaching methods:	Lectures and discussion, group work aimed at producing a literature review on a given/selected topic.
Assessment methods including grading structure [49]:	Semestral assignment (40%), activity (10%) and final examine (oral and written/graphical presentation of individual/group assignment and a critical analysis of a subjest) (0–50 %).
Bibliography[50]:	Obligatory: Castells, M. (2003). The Process of Urban Social Change. U: A.R. Cuthbert (ur), *Designing Cities: Critical Readings in Urban Design* (str. 23–27). London: Wiley-Blackwell. Čengić, N. (2011). Remodelling Urban Meaning – Sarajevo Case. *The Importance of Place, Conference Proceedings*, str. 1214–1225. Sarajevo: Arhitektonski fakultet Sarajevo. Čengić, N. (ur) (2008). Rječnik savremenih pojavnosti i procesa u gradu – knjiga 1, 2 i 3 (server AFS). Additional: Fainstein, S. (2010). *The just city*. Ithaca and New York: Cornell University Press. Harvey, D. (2012). *Rebel cities: from the right to the city to the urban revolution*. London; New York: Verso. **Komisija za urbanizam i prostorno uređenje Savezne skupštine** (1971). *Osnove politike urbanizma i prostornog uređenja*. Palast, G. (2001, april 29). IMF's four steps to damnation. The Guardian. Zakonodavna materija iz oblasti urbanog planiranja.

[49] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[50] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Žuljić, V-J., Čengić, N. i Čakarić, J. (2015). *Sarajevo metropola – Koncept razvoja*. Sarajevo: Arhitektonski fakultet.

Code: 01.04.05	Title of the subject: URBAN DESIGN 5		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 6
Status: OBLIGATORY		**Total number of hours: 60** Lectures: 15 Exercises: 45	

Teaching staff	Teachers and associates n the field urbanism and spatial planning
Prerequisites:	none
Aim (aims) of the subject:	The use of gained knowledge in the field of urban and regulation planning, and building the concept. Critical understanding of the knowledge on the city, urban structure, aesthetics, functionality, society and humans, for the purpose of constructing a human-oriented city. The tasks and responsibilities of an architect-urbanist. Building sensitivity of an architect-urbanist toward physical and social context.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Planning and designing of settlements of up to 5000 inhabitants, for the needs of primary or secondary housing. Housing in a natural and culturological context – from the authentic, to international and global city. Theories and standards for planning and design of human settlements. Design methods and methodology. Laws and bylaws. Formation of space. Topics can be: city centres, macrourban centers, urban reconstruction.
Learning outcomes:	Knowledge: Ability to apply knowledge in practice; Ability to creatively generate new ideas and shapes; Ability to apply the spirit of synthesis and shapes; Decision-making skills; Knowing the contemporary and historical works that have achieved the highest standards of urbanism; Awareness of the potentials of the new technologies and influence to the future city; Critical awareness on political and financial motifs of clients and urban regulations for the development of an ethical framework for decision-making within a constructed environment; Skills: Ability to create an urban project/design which fulfils ethical, aesthetical and technical conditions; Ability to work in a high degree of autonomy and in cooperation; Ability to appropriately communicate with various audience orally, in writing and graphically.

	Competences: building the settlement concept, with qualitative and quantitative data review.
Teaching methods:	Lectures and discussion; Practical classes.
Assessment methods including grading structure [51]:	Semestral project (40%), activity (10%) and final exemine (oral and written/graphical presentation – guidelines, concept and their implementation into a project) (0–50 %).
Bibliography[52]:	Obligatory: Bacon, E. (1969). *Design of Cities*. London: Thames and Hudson. Gosling, M. (1984). *Urban design*. New York: Academy editions, St. Martins Press. Krier, R. (1979). *Urban space*. London: Academy editions. Krier, R. (1982). *An Architecture*. London: Academy editions, St. Martin's Press. Krippendorf, J. (1986). *Putujuće čovječanstvo*. Zagreb: SNL, Zavod za istraživanje turizma. Linč, K. (1974). *Slika jednog grada*. Beograd: Građevinska knjiga. Sitte, C. (1967). *Umjetničko oblikovanje gradova* (Đ. Tabaković, Transl.). Beograd: Građevinska knjiga. Vlada Federacije Bosne i Hercegovine (2005). Uredba o jedinstvenoj metodologiji za izradu dokumenata prostornog uređenja. *Službene novine Federacije BiH*, br. 63/04 i 50/07. Worskett, R. (2000). *The character of towns*. London: The Architectural Press. Additional: Maretić, M. (1966). *Gradski centri*. Zagreb: Školska knjiga. Samuels, I., Panerai, P. i Castex, J. (1989). *Urbane forme*. Beograd: Građevinska knjiga Agora. Žuljić, V-J. (1984/1990/2000). *Gradski centri; Stanovanje - stambena naselja; Makrourbani centri. Rekreacija - Separati*. Sarajevo: Arhitektonski fakultet Sarajevo.

[51] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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ELECTIVE COURSES IN 2nd SEMESTER

Code: 01.01.16.	**Title of the subject:** ABSTRACT VISUAL EXPRESSION OF SHAPES, COLOURS AND MOVEMENT		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours:** 30 Lectures 15; Exercises 15; Classes are integral – lectures and practical lessons are conducted simultaneously	
Teaching staff	Teachers and associates elected in the field to which the subject belongs - DEPARTMENT FOR SPATIAL AND GRAPHICAL VISUALISATION		
Prerequisites:	Successful completion of the obligatory two-year courses in Freehand Drawing. Student load – 15.		
Aim (aims) of the subject:	Introducing students to the origin of modern art, beginnings and spreading of abstract art, focusing on painting in sculpture and its echo in architectural design. The intention is for students to enter a new phase of creative and research work, having acquired the necessary classical visual (theoretical and practical) knowledge, in order to creatively affect their individuality and to gain a more comprehensive knowledge.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	- Cubism as an artistic movement – the Early Phase (the work of P. Cezanne as a transition from Realism into abstract art) **4.** Constructing a visual whole Collage technique (the use of elements, components, groups), - Black and white collage I, technique: paper; - Black and white collage I, technique: paper; - Black and white collage I, technique: paper; - Black and white collage II, technique: paper; - Black and white collage II, technique: paper; - Black and white collage II, technique: paper; - A revision of previous classes Cubism as an artistic movement – Analytical Cubism (P. Picasso, G. Braque, a group of Cubist painters) Cubism in sculpture and the influence of Cubism to architecture of the time. **5.** Constructing a visual whole Collage technique (motifs assembled into a program as chosen by the students)		

	- Colour collage I, technique of combining materials; - Colour collage I, technique of combining materials; - Colour collage I, technique of combining materials; - Black and white or colour collage, collage in space; - Black and white or colour collage, collage in space; - Black and white or colour collage, collage in space; - Completion of works, discussion about the works and their final part.
Learning outcomes:	Knowledge: Understanding Cubism and its legitimacy and its reflection on the art and architecture of the twentieth century; Skills: Work on new materials and collage techniques; Competences: Possibility of analyzing space and developing an idea by collage techniques through polyperspective.
Teaching methods:	Theoretical part: Lectures with projections and visual analysis, discussion. Practical classes: Workshops: Work on sketches (combined techniques), assembling materials for the collage technique, which is the focus of the practical classes.
Assessment methods including grading structure [53]:	Attendance at lectures and workshops, activities that include engagement in discussions, assembling of materials necessary for the work on collages, work on the sketches. The grade is assigned on the basis of practical classes and the final work. The distribution is as follows: in-class participation 30% practical classes 70%
Bibliography[54]:	Obligatory: - Bogdanović, K. (2009) Uvod u vizuelnu kulturu, Beograd: Zavod za udžbenike i nastavna sredstva, - Dora, V. (2006) Apstraktna umetnost, Beograd: METAPHYSICA Additional: - Read, H. (1967) Istorija modernog slikarstva (od Sezana do Pikasa), Beograd: Jugoslavija.

[53] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[54] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.04.33	**Title of the subject:** **ARTIFICIAL LIGHTING AND URBAN ENVIRONMENT**		
Cycle: II	**Year of the study: I**	**Semester: 2nd**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 30** Lectures 15 Exercises 15	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [Do not enter names in this section. Leave the formulation as indicated in this section]
Prerequisites:	-
Aim (aims) of the subject:	Mastering terminology and methodology of planning and design of urban lighting in the complex relationship between the city functions and their organisation in space.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	History of artificial lighting development; Theoretical-analytical basis of the day/night image of the city; Environmental aspect of artificial lighting; Perceptive-psychological basis of artificial lighting; Sociological aspects of artificial lighting; Technical basics of lighting design; Urban lighting planning and design methodology; Case study task / Lighting design concept for a selected spatial area; Final presentation and discussion in front of an audience (students, assistants, professor).
Learning outcomes:	Knowledge: Development of analytical and critical understanding of the entire image of the city, both day and night. Perceiving space as a scenography framework for appropriate unveiling of all city functions in the day/night continuity, with an emphasis to the urban nightscape aspect. Skills: Application of visually perceptual, technical and environmental aspects in planning and designing the urban nightscape. Competences: Ability to produce urban lighting masterplans and urban nightscape designs .
Teaching methods:	Lectures – oral, visual and comparative lecturing about the design issues; Individual engagement on the case study assignment.
Assessment methods including grading structure [55]:	Individual work at practical classes (design proposal presentation scheduled for mid-semester), discussion upon completion of the project.

[55] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Final exam in case a student fails to gain the required minimum of points.
Bibliography[56]:	Obligatory: Alihodžić, R. R. (2007). *Definisanje primarnih aspekata psihološkog doživljaja arhitektonskog prostora i forme*. Ulcinj: Prima. Andreić, Ž. (2009). *Problematika svjetlosnog onečišćenja*. Zagreb: Rudarsko-geološko-naftni fakultet. Halprin, L. (1971). *Gradovi.* Belgrade: Gradjevinska knjiga. Krier, R. (1975). *Urban space*. London: Academy editions. Linch, K. (1974). *Slika jednog grada.* Belgrade: Građevinska knjiga. Norberg-Schulz. (1975). *Egzistencija, prostor i arhitektura*. Belgrade: Građevinska knjiga. Žuljić, V. J. (1988). *Determinante urbane morfologije grada sa posebnim osvrtom na morfologiju Sarajeva*. (Doctoral thesis defended at the University of Belgrade). Additional: Vresk, M. (1980). Osnove urbane geografije. Zagreb: Školska knjiga. Sitte, C. (1967). *Umjetničko oblikovanje gradova* (Đ. Tabaković, Transl.). Belgrade: Građevinska knjiga.

[56] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.05.18	Title of the subject: BIOCLIMATIC ARCHITECTURE		
Cycle: II	Year: I	Semester: 2nd	Number of ECTS credits: 3
Status: ELECTIVE		Total number of hours: 30 Lectures Exercises Field work	

Teaching staff	
Prerequisites:	
Aim (aims) of the subject:	Presentation of architecture (urban ensemble, architectural building) as an energy system and understanding the importance of the relationship between the external influences and input solutions of architectural tasks.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	According to the content of compulsory textbooks: Hadrović, A. (2008). Bioclimatic architecture-seeking the way to paradise. Sarajevo. Faculty of Architecture of the University of Sarajevo. WEEKS 1-2: Definition of bio-climatic architecture. Understanding the bio-climatic architecture through storytelling. Sustainability; WEEKS 3-5: Energy. Sources of energy and their perspectives. The size and character of the system; WEEKS 6-9: the coexistence of architecture (man) with the natural environment. Autonomous architecture ("primitive" dwellings - human response to natural conditions with authentic disposition and materialization solutions). Make contemporary solutions to insisted fit into a natural environment; WEEKS 10-12: architectural object - volume boundary relationship (shape factor). Heat losses and gains (solution elements and materialization). SESSIONS 13-15: Overview of Contemporary and Futuristic Solutions.
Learning outcomes:	Knowledge: Students should understand the understanding and practice of "bio-climatic architecture" through history, to this day. Skills: The student should be enabled to create bio-climatic architecture under the conditions of a concrete natural and social environment. Competencies: Students should be able to see architecture as the unity of its artistic and exemplary-empirical components in the light of contemporary agenda.
Teaching methods:	Lectures with projections that follow the subject matter.
Assessment methods including grading structure [57]:	Lecture tracking 5% Individual (seminary) workshop 95%
Bibliography[58]:	Required: Hadrović, A. (2008). Bioclimatic Architecture, Searching for a Path to Heaven. North Charleston: Booksurge. Supplementary: Balcomb, J.D. (1992). *Passive Solar Buildings*. Cambridge, MA: MIT Press. Cook, J. (1996). *Passive Cooling*. Cambridge, MA: MIT Press.

[57] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[58] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Granjean, E. (1972). *Vohnpysiologee*. London: Artemis. Hadrović, A. (2010). *Arhitektonska fizika*, *drugo izdanje*. Sarajevo: Arhitektonski fakultet. Larson, R. W. (1996). *Implementation of Solar Thermal Tehnology*. Cambridge, MA: MIT Press. Moritz, K. (1975). *Pravilno i pogrešno*. Belgrade: Gradjevinska knjiga. Matić, M. (1988). *Energija i arhitekura*. Zagreb: Školska knjiga. Rudolfski, B (1976). *Arhitektura*. Belgrade: Građevinska knjiga. Journal: Techniques et Architecture (special editions: 291/73, 315/77) Journal: The Japan Architecture, DBZ

Code: 01.05.39.	**Subject title: MANAGEMENT AND PROGRAMMING OF ARCHITECTURAL PROJECTS**		
Cycle: 2nd	**Year: 1st**	**Semester: 2nd**	**Number of credits: 3** (according to ECTS)
Status: ELECTIVE		**Total hours: 30 (2/week)**	

Teaching staff:	Teachers and associates engaged in the scientific field "Urbanism and Spatial planning"
Enrolment requirements:	-
Subject objective(s):	To train students for an integrated approach to the management, conceptualization, construction and materialization of architectural projects, with the intent to gain competence in the realization of architectural objects by mastering the relevant principles of project management as a scientific discipline.
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*	• First week: Scientific approach to business management; • Second and third week: Business management system and organizational structure; • Fourth week: Basic business management principles; • Fifth, sixth and seventh week: General meaning of the concepts project and project management, principles and processes of project management; • Eight week: the process of creating an architecturally defined space; • Nineth week: Architectural programming; • Tenth, eleventh and twelvth week: Architectural design; Construction; Maintenance and usage; • Thirteenth and fourteenth week: Managing the implementation of the construction project; • Fifteenth week: Practical application of learned principles.
Learning outcomes:	Knowledge: mastering basic managerial knowledge and skills in the context of projects in the domain of building construction. Skills: Constructing a cost-analysis study, project programing, project task, preparing tender documents and managing the managerial skills necessary for project management (venture) from the domain of building construction. Competencies: Ultimately, students would integrate the principles of management and the principle of architectural profession and science to achieve the competencies required by current architectural practice.
Teaching methods:	Lectures and interactive discussion, working on concrete examples.
Knowledge assessment methods with grading structure[59]:	The grade from the course is based on teaching activities (attendance at lectures and participation in the discussion 49%), preparation and defence of seminar work - 51%.
Literature[60]:	Obligatory:

[1] **The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton**

[60] **The Senate of the higher education institution as the institution or council of the organizational unit of the higher**

- Bijedić, DŽ. (2000). *Aplikacija principa projekt menadženta u realizaciji projekata visokogradnje.*. Magistarski rad (Mr.sc.), Sarajevo: Aritektonski fakultet Univerziteta u Sarajevu.

Additional:

- Dingle, J. (1997). Project Management–Orientation for Decision Makers. London: Arnold Publishing.
- Federalno ministarstvo prostornog uređenja i zaštite okoliša & IMG (1999). Priručnik o tehničkim i obligacionim uvjetima za projektovanje i izvođenje radova na izgradnji, rekonstrukciji, sanaciji adaptaciji građevina visokogradnje. Sarajevo. Rabic.
- Lewis, J.P. (1997). Fundamentals of Project Management. New York: AMACOM - American Management Association.
- PMI Standards Committee (1996). A Guide to Project Management Body of Knowledge. Upper Darby, PA: Project Management Institute.

education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

Code: 01.03.52	Title of the subject: Special Architectural Projects		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours: 90** Lectures: 30 Exercises: 60	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:	-		
Aim (aims) of the subject:	Introduction to current methods of research and experimentation in architectural design through simulation of working conditions, design and presentation of conceptual architectural studies and conceptual architectural solutions of special architectural programs in international architectural project studios.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of special architectural programs; 2. Contemporary principles of designing special architectural programs 3. Spatial-functional groups and spatial configuration of special architectural programs; 4. Urbanistic, architectural and ambient aspects of the planning of special architectural programs; 5. Architectural programming of special architectural projects; 6. Analysis of architectural types and functional-spatial units of special architectural programs.		
Learning outcomes:	**Knowledge:** Programming and architectural design of buildings with special architectural programs. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the building with special architectural program develops through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. Developing skills for presentation and communication of a project design solution. **Competences:** The student is able to create the conceptual architectural project of the building with special architectural program of the average complexity, based on the integrated knowledge from several previous professional subjects, simultaneously mastering the design		

	conceptual and technical-methodological basics of architectural design.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [61]:	Students are assessed through successfully executed practical assignments (60% of the grade); Presentations (20% of the grade), Project design defense (20% of the grade).
Bibliography[62]:	**Obligatory:** Current professional and theoretical literature in the field of architecture and urban planning. Picard,Q., RIBA The Architects Handbook, Blackwell, 2002; Neufert,Q., Arhitects' Data, Blackwell Science, Third Edition, 2000 De Chiara, J., Crosbie J.M., Time-Saver Standards for Building Types, McGraw-Hill, Fourt Edition, 2001 **Additional:** Durmišević,E., Pašić,A., Çolakoğlu,B., Dynamic Architecture, University of Twente, 2015 Durmišević,E., Pašić,A., Urban Strategies for Green Kadiköy Istanbul, International Design Studio 2013, University of Twente, 2013 Durmišević,E., International Design Studio 2011 Green Transformable Building Center, University of Twente, 2011 Recent Architectural Magazines, Books about Architecture, Urban planinng, Urban design and Landscape, Architectural Design Manuals and Monographs of Architects

[61] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[62] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.29	Title of the subject: SPECIFIC HOUSING AREAS		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 30** Lectures 30	
Teaching staff	**Teachers and associates elected in the field – Department of Architectural Design**		
Prerequisites:	-		
Aim (aims) of the subject:	The goal is to introduce students to a diverse typology of the specific housing space and temporary residence area, where social participation plays a significant role. Through theory, terms, presentation of possible typologies and functions of objects for social standards, the goal is to make students, future creators of spaces for problematic and specific purposes, sensitive for the issues and specific purposes (material, social, physical and physiological, psychological, spiritual, age-oriented, etc.) of individuals, groups and the society in general, in a search for an adequate architectural solution that would be an optimal framework for the realisation of those needs.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	An overview of typological nomenclature of specific housing spaces; Retirement home and other forms of housing of the elderly, relatively independent persons; Shelters, homes for accommodating the elderly and the weak; Hospices; Homeless shelters; Student homes, apartments and campuses; Homes and dormitories for pupils; Monasteries and seminaries – Madrassahs and tekke – Orthodox monasteries; Objects for children and young people without parental care (orphanages, children's settlements, "a half-way home" – apartments…); Homes for children and young people with special needs – supported housing (for the visually impaired, for the physically disabled; for the intellectually disabled…); Safe homes – a temporary housing for the people exposed to family violence; A temporary shelter for the people affected by a natural or other catastrophe; Resocialisation facilities for junior delinquents (correctional facilities); the "communes" for rehabilitation and resocialisation of addicts; Penitentiaries: Correctional facilities of different security level for adults – prisons.		
Learning outcomes:	Knowledge: Acquiring theoretical knowledge on the needs of the specific categories that are reflected to the character of the designed spaces in several levels. Acquiring		

	professional competences through introduction to the methods and instruments, elements and standards, by which a quality interaction between special needs of users and spaces designed for them can be simulated and achieved, as well as an insight into the contemporary tendencies, which is a precondition for a possible continuation of work in this field in the 3rd and 4th semester of the studies. Skills: Students adopt design skills, project planning and organization, and presentation and communication skills. Competences: By successfully mastering these issues, students acquire some general (instrumental, interprersonal, system) and partly professional competences, which require mastering the basic understanding of the field of housing by critical thinking and creative, independent activity, as well as creating awareness of the social responsibility, keeping in touch with the most recent achievements of architectural profession, etc.
Teaching methods:	Lectures and activities at the seminar. A combination of informative and interactive lectures supported by multimedia presentations containing comparative analysis of the specific examples – projects, realisations, as well as successful final diploma thesis in this field. Participation at the seminar with involvement of experts that deal with the themes stated in the content of the subject, as well as two announced tests. Through activities at the seminar, students widen their knowledge, explore, analyse and publically present their findings. Initiating students to undertake research activities in the studio, where they choose one of the topics offered in this field as their final thesis. They are thus introduced to the methodology of writing the theoretical part of the thesis, its application to the practical, designing section, as well as public presentation of the thesis.
Assessment methods including grading structure [63]:	Through the aforementioned teaching process, students are assessed during the semester and if they meet all the requirements, they are assigned the final grade without being obliged to take the final exam. Students who attended 80% of the classes and failed to achieve the required minimum of positive grades during the semester have to take the final written exam. The following components are considered for the final grade: attendance: 10%, tests 20%, seminar assignment 70% of the total grade.

[63] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Bibliography[64]:	Obligatory: Allen, P., Mullins, W. (1975). Ein Platz fur Studenten. Berlin: Bauverlage. Cekić, N. (2001). Razvoj stambenih jedinica kod studentskih domova. Niš: Građevinski i Arhitektonski fakultet. Fairweather, L., McConville, S. (2006). Prison Architecture – Policy, Design and Experience. London: RIBA. Additional: Fejzić, E. (2001). Osobe umanjenih tjelesnih sposobnosti i arhitektonske barijere. Sarajevo: Arhitektonski fakultet. Finci, O. (2009). Koncepcije i oblici stanovanja starih osoba – skripta. Sarajevo: Arhitektonski fakultet. Mostaedi, A. (2003). Homes for Senior Citizens. Barcelona: Broto & Minquet. Perkins, B., Hoglund, J.D., King, D., & Cohen, E. (2004). Building Type Basic for Senior Living, New Jersey: John Wiley & Sons. Redstone, G. L. (1986). Institutional Buildings, An Architectural Record Book. Schittch, C. (2007). Housing for People of All Ages. Munich: Edition DETAIL. Thomson, N., Dendy,E. (1984). Sports and Recreation Provision for Disabled People. London: Architectural Press Ltd. Magazines / thematic journals treating the issue of specific housing areas and temporary housing: TA,AW, DB,AA, Baumeister, B+W, Detail, ORIS..... Note: The professor shall recommend literature in the related – adjacent fields, as well as the relevant web sources, all depending on the topic for the seminar assignment.

[64] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.05.21	Title of the subject: CONSTRUCTION PROJECT MANAGEMENT		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 3 hours per week / 45 hours per semester** Lectures 1 per week / 15 per semester Exercises 2 per week / 30 per semester	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs:** **Department of architectural construction and building technology**		
Prerequisites:	None.		
Aim (aims) of the subject:	The main goal is education for the purpose of drafting estimate and tender dossiers with a priced bill of quantities for construction works. Inclusion into different phases of the realisation process through the entire investment cycle, such as: contracting works, participation in the technological preparation, drafting of dynamic plans, construction organisation study, supervision and control of construction process, as well as payment of the performed work. The subject entails processes of development and management of investment enterprises with all the necessary assistance and activities in the execution procedure: content, scope, methods of selection and processing of input data related to the subject and the object of investment contract, ways of drafting the pre-investment and investment studies, tender documentation, as well as procedures of project management in the entire investment cycle.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Priced bill of quantities (classification of works in building constructions, structure and form, bill of quantities and calculations, general and technical conditions for implementation of certain works); Normative and standards of work in construction (the notion of norms and norming, the purpose of normative, kinds of norms); Management and realization of projects: General terms; Division of investments; Terminology of investments; Project realization cycle elements; Project management in an investment cycle; Contracting and realization of works: Kinds of contracts; Ways of contracting, rights and obligations of the contracting parties; Consulting contract; Contract on implementation of works; FIDIC contracting conditions; Business ethics; Legislation: Domestic legislation in the field of		

	construction, European directives; Quality control organization for construction production: Supervision of Investor; Author supervision; Inspection supervision; Quality control methods; Price estimate for construction works: Calculation elements; Auxiliary – previous calculations; Calculation of prices for the main work processes; Indirect expenses coverage estimate (factor).
Learning outcomes:	Knowledge: The expected result is understanding issues of realization of a project in the entire investment cycle. Students gain the basic knowledge in the field of project management. Skills: Making the priced bill of quantities Competences: Student can do priced bill of quantities by himself.
Teaching methods:	Lectures supported by PowerPoint presentations and engagement in practical classes.
Assessment methods including grading structure [65]:	Assessment is done by assigning points for each form of activity and knowledge checking during the semester as well as on the final exam that determines the final grade. Testing knowledge through two written tests in the semester. Each test carries 10% points in the rating structure, the exercises carry 50% of the points in the grading structure and the final written exam carries 30% points in the rating structure. 10 (A) - (outstanding success, with no mistakes or with minor defects), carries 95-100 points, 9 (B) - (above the average, with a few mistakes), carries 85-94 points, 8 (C) - (average, with noticeable mistakes), carries 75-84 points, 7 (D) - (generally good but with significant disadvantages), carries 65-74 points, 6 (E) - (meets the minimum criteria), carries 55-64 points, 5 (F, FX) - (does not meet the minimum criteria), less than 55 points.
Bibliography[66]:	Obligatory: Grupa autora (2016). Upravljanje projektima, Primaprom, Sarajevo. Dreca, Š. (2002). *Građenje.* Sarajevo: Arhitektonski fakultet.

[65] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[66] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Dreca, Š. (2008). *Organizacija građevinske proizvodnje, skripta.* Sarajevo: Arhitektonski fakultet. Dreca, Š. (2008). *Organizacija, upravljanje proizvodnjom i racionalizacija, skripta.* Sarajevo: Arhitektonski fakultet. Dreca, Š. (2008). *Planiranje i programiranje građenja, skripta.* Sarajevo: Arhitektonski fakultet. Additional: Đorđević, D. (2001). *Izvođenje radova u visokogradnji*. Belgrade: Izgradnja. Đuranović, P. (2003). *Upravljanje građevinskim projektima*. Podgorica: Građevinski fakultet. Ivković, B., Popović, Ž. (1994). *Upravljanje projektima u građevinarstvu*. Belgrade: Jugoimpekt i IP Nauka. Marušić, J. (1994). *Organizacija građenja*. Zagreb: FS. *Normativi i standardi rada u građevinarstvu*-visokogradnja Valid legal legislation, rules and regulation in the fild of construction.

Code: 01.06.12	**Title of the subject: COMPOSITE AND PRESTRESSED STRUCTURES**		
Cycle: II	**Year of the study: I**	**Semester: 2nd**	**Number of ECTS credits: 3**
Status: Elective		**Total number of hours: 45** Lectures 30 Exercises 15	

Teaching staff	Teachers and associates elected in the field to which the subject belongs - Department of Structural Systems
Prerequisites:	None.
Aim (aims) of the subject:	Acquiring knowledge on the possibility of forming the composite girder through a combination of different materials, making use of their best characteristics. In the field of prestressed structures, a student is acquainted with the possibility of increasing the load bearing capacity of the structures, through the use of certain techniques and prestressing systems achieved by the application of different combinations of materials: the concrete-steel, steel-steel and wood-steel combination.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction. Large span load bearing structures. High rise objects. Composite steel-concrete structures: Load bearing structure materialisation; Design principles and application of steel-concrete composite structures; Structural details. Prestressed structures: Idea and goal of prestressing; The basic principles of design and application of prestressed concrete structures; structural details. Composite and prestressed wooden structures; Load bearing structure materialisation; Principles of design and application of the wood-wood, wood-steel, wood-concrete, wood-lightweight concrete composite structures; Structural details; Idea and goal behind design and application of the prestressed wooden structures; Basic principles and application of wooden prestressed structures; Structural details. Composite and prestressed structures made of composite materials: Strengthening load bearing structures through application of composite materials in composite and prestressed structures; Structural details.
Learning outcomes:	Knowledge: Independent design and conceptual solution of optimum load-bearing construction using the composite or prestressed system and adequate materials. Skills:

	Ability to independently solve the concept of load-bearing construction of an architectural object in given systems and selected materials. Competences: By mastering the content of this subject, students will understand the issues related to design of contemporary composite and prestressed structures and will acquire knowledge on possibilities of application of different materials used in a single structural assembly.
Teaching methods:	Auditory lectures and practical classes. At practical classes, the students need to complete a seminar assignment in groups. A discussion between candidates follows seminar presentations, moderated by the assistant.
Assessment methods including grading structure [67]:	Students are assessed through the presentation of seminar assignments in presence of the professor and the assistant (seminar assignment 80%, students activity 20%). Candidates who do not pass are obliged to take the final, theory-based exam. The final exam includes theoretical part (max. 80%). The final grade is formed from the completed, presented and defended seminar assignment, or a successfully completed final exam. Students who get the second signature in the index are eligible to take the final exam, meaning that they have fulfilled the obligations as prescribed by the Statute. The exam is prepared through lectures and practical classes, as well as through the use of literature recommended by the professor and the assistant at the beginning of the teaching process.
Bibliography[68]:	Obligatory: Miljanović, S. Lectures prepared by the professor in charge of the subject. Mešić, E., Miljanović, S. (2012). Savremeni konstrukcijski koncepti višespratnih zgrada – metalne i spregnute konstrukcije. Sarajevo: Građevinski fakultet. Additional: Conceptual Design of Structures. (Volume I – Methodology; Volume II- Case Studies). (1996). Stuttgart: E.Kurz and Co. Dujmović, D., Androić, B., Lukačević, I. (2012). Projektiranje spregnutih konstrukcija prema Eurocode 4, I.A. Zagreb: Projektiranje. Gabeta, S. (1990). Form-Force-Mass (IL 25). Sttutgart: Institut fur Leichte Flachentragwerke.

[67] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[68] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Hart, F., Henn, W., & Sontag, H. (1991). Atlas čeličnih konstrukcija. Belgrade: Građevinska knjiga. Herzog, T., Schweitzer, R., Volz, M. (2003). Holzbau Atlas. Munich: Institut fur internationale Archtektur – Dokumentation. Ofner, R. (2007). Leichtbau und Glasbau. Graz: IBX Fachbereich Ingenieurbaukunst. Zlatar, M. (2011). Prednapregnuti beton-skripta. Sarajevo: Građevinski fakultet.

Code: 01.04.42	**Title of the subject: TRANSFORMATION OF URBAN ANSAMBLE**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours:** 60 Lectures 15 Exercises 45 Field work	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning		
Prerequisites:	None.		
Aim (aims) of the subject:	Acquiring the notion about the direct processes related to transformation of the urban ensemble, by focusing on the careful selection of materialization elements, and by directing student's interest towards the city as an expression of culture, lifestyle and historical stratification. The subject requires comprehensive observation of urban ansamble, because isolated observation does not allow the assessment of its complexity and requires subtle relationship with the original urban matrix with which it forms the spatial system.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	a) Introduction to the transformation of the urban ensemble - typification and morphology: street, square, block, crossroads, special spaces (social activities, promenades, nodal points, special forms of recreation, city open uncompleted and built cultural and historical complexes, parks, fountains, monumental places...); Design and practical aspects of urban equipment - arrangement of space for pedestrians; A critical overview of the use of building materials (functional, aesthetic, ambient and environmental); Structural consequences of transformation of the urban ensemble; Elaboration of aesthetic components (composition, line culture, traditional matrix); Components of the urban equipment; Visual communications and their micro location in the urban ensemble; Spatial and morphological sequences - the phenomena of perception of urban space; and b) Comparative analysis of current examples from practice according to defined criteria;		
Learning outcomes:	Knowledge: Critical overview of the specific spatial coverage by acquiring the necessary general and professional competence related to the transformation of the urban ensemble.		

	Skills: The ability to analyze influential factors related to the changes of the urban ensemble and the synthesis of the acquired knowledge. Competences: Development of design-planning skills.
Teaching methods:	In the first week of the semester, students will take a tour around the site and collect material for the necessary analyzes: urban identification-identifying and defining the existing urban elements, the character and perception of the urban ensemble in the context of social-communication relations. After a joint presentation and discussion, the first phase of their work will be evaluated. Until the last week of the semester, students will be separated (individually or by groups), and they work on the development of the concept and project of the transformation of the urban ensemble, followed by the evaluation of the second phase of the project work. In the last week of the semester, students will present the final project of the transformation of the urban ensemble, where the final phase of the work will be evaluated with discussion. During the period of the course, there is the possibility of organizing a joint, international workshop: Faculty of Architecture Sarajevo - Faculty of Architecture Ljubljana, which includes work in mixed groups (students from Sarajevo and students from Ljubljana). If the Workshop happens, the lessons will take place in the following way: In the first week of the semester, students from Sarajevo and Ljubljana will visit the location in Sarajevo, make detailed analyzes: urban identification-identifying and defining the existing urban elements, the character and perception of the urban ensemble in the context of social-communication relations. After a joint presentation and discussion at the Faculty of Architecture in Sarajevo, the first phase of their work will be evaluated. Until the last week of the semester, students are separated, and with online communication they work together on the development of the concept and project of the transformation of the urban ensemble, followed by the evaluation of the second phase of the project work. In the last week of the semester, working groups meet again at the Faculty of Architecture in Ljubljana and jointly present the final project of the transformation of the urban ensemble, where the final phase of the work will be evaluated with discussion.

Assessment methods including grading structure [69]:	Through the mentioned types of teaching during the semester, a permanent evaluation of the work of the students will be carried out, and the students will receive the final grade at the end of the semester by evaluating the first (20%), the second (60%) and the third (20%) phase of the project on the transformation project of the urban ensemble.
Bibliography[70]:	Obligatory: Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Gehl, J. i Gemzoe, L, New city spaces, Danish Architectural Press, Copenhagen, 2001 Halprin, L, Gradovi, Agora, Građevinska knjiga, Beograd, 1973 Rossi, A, The Architecture of the City, MIT, Boston, Massachusetts, 1997 Taylor, L, Urban Open Space, Academy Edition, London, 1981 Uhlig K, Pedestrian Areas - from Malls to Complete Networks, Academy Edition, London, 1979 Venturi, R, Braun, D. S. i Ajzenur S, Pouke Las Vegasa, Agora, Građevinska knjiga, Beograd, 1988 Zite, K, Umjetničko oblikovanje gradova, Agora, Građevinska knjiga, Beograd, 1967 Aureli P., The Possibility of an Absolute Architecture, MIT Press, Boston, 2011 Castells M. City and the Grassroots, University of California Press, 1983. Los Angeles Additional: Other literature depending on the narrower thematic choice of the electoral group.

[69] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[70] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.14	**Title of the subject: URBAN TRANSFORMATIONS FOR THE 21st CENTURY**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours:** 45 Lectures 15 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Examining possibilities of functional and structural changes to a city (especially traffic) from physical to futuristic way of thinking. Analytical discourse in practical classes will also emphasise the processes of redesign of the constructed and non-constructed environment.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction: growth, development, change – what constitutes their essence? Urban transformations for the 21st century – old-new – the essence of developing programmes and projects for immediate future: the notion of the current in urbanism (global flows and trends, an attempt to select the future needs indicators), Transformation as a process of adjustment of the new to the old and vice versa, Analysis of elements of architecture, structure of materials, etc., for the purpose of developing programme basis for the future modern city; Defining structural and architectural parameters for the city of future (a location for wellbeing and sustainability); Selection of the concept of measure and transformation unit – the quarter and its perspectives in the existing urban matrix; Methodology of interventions: technical, programme, political and social elements: Location theory in the application of stratification and prices of planned reshaped sections.
Learning outcomes:	Knowledge: A graphic-analytical review of the achieved critical level of transformation as a redesign process; Skills: Comparative analysis of major technological interventions in the world; Competences: Possible urban sketch – futurism and possibilities of foreseeing future (an analysis of examples in the past 100 years and a quest for the future code).
Teaching methods:	Comments of the current templates for the development new concepts of urban matrices, with an overview of real

	needs of the quality of life improvement in an urban environment.
Assessment methods including grading structure [71]:	Individual engagement at practical classes, discussion at the presentation of the assignment, final written exam for the students who failed to achieve the required minimum of points.
Bibliography[72]:	Obligatory: Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Hamidović, M, Mjesto za dobrobit čovjeka, Separat, Arhitektonski fakultet Sarajevo, 1988 Le Corbusier, Način razmišljanja o urbanizmu, Agora, Građevinska knjiga, Beograd, 1974 Mercer, C, Living in cities: Psihology and the Urban Environment, Pengruin Books, Middlesex, England, 1975 Middleton, R, The idea of the city, Arh. Assoc. London, MIT Press Cambridge, Massachusetts, 1996 Percik, E, N, Gorod v Sibiri, Moskva, 1980 Stewart, M, The City: Problems of planning, Penguin Education, Middlesex, England, 1974 Additional: Other literature recommended in accordance with the narrow thematic determinants of the elective group.

[71] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[72] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.58	**Title of the subject: CULTURAL FACILITIES 1**		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 6
Status: ELECTIVE		**Total number of hours: 90** Lectures: 30 Exercises: 60	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:	-		
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and morphological character of museum and library buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of museum and library buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the museum and library buildings of the average complexity.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of museum and library buildings; 2. Contemporary principles of organizing museum and library buildings; 3. Spatial-functional groups and spatial configuration of museum and library buildings; 4. Urbanistic, architectural and ambient aspects of the planning of museum and library buildings; 5. Architectural programming of museum and library buildings; 6. Analysis of architectural types and functional-spatial units of museum and library buildings.		
Learning outcomes:	**Knowledge:** programming and architectural design of museum and library buildings. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the museum and library building develop through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. Developing skills for presentation and communication of a project design solution. **Competences:** The student is able to create the conceptual architectural project of the museum and library building of the average complexity, based on the integrated knowledge from several previous professional subjects,		

	simultaneously mastering the design conceptual and technical-methodological basics of architectural design.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [73]:	Students are assessed through successfully executed practical assignments (60% of the grade); Presentations (20% of the grade), Project design defense (20% of the grade).
Bibliography[74]:	Obligatory: Current professional and theoretical literature in the field of architecture of museums and libraries Neufert,E., Arhitects' Data, Blackwell Science, Third Edition, 2000 De Chiara, J., Crosbie J.M., Time-Saver Standards for Building Types, McGraw-Hill – Fourt Edition, 2001 Von Naredi-Reiner,P., Museum Buildings: A Design Manual, Birkhäuser, 2004 Hoffmann, H.W., edited by Schittich,Ch., Construction and Design Manual: Museum Buildings, DOM publishers, 2016 Lushington, N., Rudolf, W., Wong, L., Libreries: A Design Manual, Birkhäuser, 2019 Additional: Durmišević,E., Pašić,A., Çolakoğlu,B., Dynamic Architecture, University of Twente, 2015 Recent Architectural Magazines, Books about Architecture, Urban planinng, Urban design and Landscape, Architectural Design Manuals and Monographs of Architects

[73] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[74] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.27	Title of the subject: HEALTHCARE FACILITIES		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours: 90** Lectures: 30 Exercises:60	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:	-		
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and cultural determinants of health care buildings. Determining the potential of architecture (architectural tools) in creating the space of health care buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of health care buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the health care buildings of the average complexity.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1.Historical overview and background of health, health systems and architecture. 2. The social paradigm of healthcare, medical technology and the architectural space 3. Contemporary principles of health care, development of the organizational health care system; 4. Urbanistic, architectural and ambient aspects of the programming and design of health care buildings; 5. Analysis of architectural types and functional-spatial units of health care buildings (case study).		
Learning outcomes:	**Knowledge:** The student will acquire advanced knowledge of design methodology by spatial-functional groups in which health care building develops through the context, form, function and technology; including a critical understanding of theories and principles. Understanding atechnologies that are important for designing health care buildings. Developing critical awareness in this field and fields of knowledge which are on borderline. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student. Application of theories, methods, tools and principles within the complex field of designing healthcare buildings. Developing skills for presentation and communication of a		

	project design solution. **Competences:** The student is able to create the conceptual architectural project of the health care building of the average complexity. Capable of critically evaluating architectural design for healthcare buildings.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [75]:	Students are assessed through successfully executed practical assignments (60% of the grade); Presentations (20% of the grade), Project design oral defense (20% of the grade)
Bibliography[76]:	**Obligatory:** Juračić, D., *Zgrade za zdravstvo*, Arhitektonski fakultet Sveučilište u Zagrebu, 2002; **Additional:** Wagenaar, C., editor in *The Architecture in Hospitals*, Nai010 Publishers, Rotterdam, 2006; Wagenaar, C., Mens, N., Manja, G., Niemeijer, C., Guthknecht, T., A Design Manual Hospitals, Birkhauser, Basel, 2018;

[75] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[76] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.06.18	Title of the subject: MASONRY STRUCTURES		
Cycle: 2nd	Year of the study: 1st	Semester: 2nd	Number of ECTS credits: 3
Status: Elective		Total number of hours: 45 Optionally elaborate the distribution of hours per type: Lectures 30 Exercises 15	

Teaching staff	Teachers and associates elected in the field/Department for construction systems.
Prerequisites:	None.
Aim (aims) of the subject:	The goal is to introduce students to the types of masonry structures. Students should be enabled to make a simplified estimate of the wall and to make a simplified activity estimate. They should also be able to estimate the duration and cost.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	A historical overview of wall constructions; The first walls, cities, materials, ways of construction; Kinds of walls, division of masonry structures depending on the function; Materials used in the masonry structures: mortar, stone, brick, etc.; the 1st written exam; Division of masonry structures according to ways of bricklaying, and according to ways of construction; Unreinforced and reinforced walls, experiments; Mechanical characteristics of masonry structures; elasticity module E, shear modules G, shrinking; the 2nd written exam; Technical regulations for walls; Designing walled construction; Reconstruction and rehabilitation of a masonry structures, maintenance of masonry structures; the 3rd written exam; masonry structures in seismically active areas, earthquakes, earthquake waves, reasons for the collapse of walled constructions; Rules and recommendations for masonry structures; Design and calculation verification of masonry structures with regards to vertical shear, strengthening of walls; the 4th written exam.
Learning outcomes:	Knowledge: Upon completion of this course, students should be able to: select the most appropriate material for the masonry structures; to recognise and calculate forces acting against the wall; to calculate the wall – a simplified calculation verification; to determine fire resistance of the wall; to estimate duration of the wall construction. Skills: basic knowledge of masonry structure

	Competences: select the most appropriate material for the masonry structures; to recognise and calculate forces acting against the wall; to calculate the wall – a simplified calculation verification; to determine fire resistance of the wall
Teaching methods:	Lectures: oral and presentational; conversational method, practical presentations, deliberations. Practical classes: presentations and consultations.
Assessment methods including grading structure [77]:	Students are assessed through written and oral exams.
Bibliography[78]:	Obligatory: Čaušević, A., Rustempašić, N. (2014*). Rekonstrukcija zidanih objekata visokogradnje.* Sarajevo: Arhitektonski fakultet. Furler, Tragverhalten von Mauerwerkswanden unter Druk und Biegung, Institut fur Baustatik und Konstruktion, ETH Zurich, Bericht Nr. 100, Birkhauser Verlag Basel, 1981. Gugisberg R., Versuche zum Tragverhalten qerbelasteter Mauerwerkswande, Institut fur Baustatik und Konstruktion, ETH Zurich, Birkhauser Verlag Basel, 1990. Sorić, Z. (1999). *Zidane konstrukcije*. Zagreb: Hrvatski savez građevinskih inženjera. Takač, S. (2000) *Zidane konstrukcije.* Osijek: Sveučilišni udžbenik Sveučilišta J. J. Strossmayera. Untersuchungsbericht des Pruf-und Forschungsinstitut der Schweizerichen Ziegelindustrie Sursee, Biegeversuche an bewertem Backsteinmauerwerk, 1992 – 1995. Additional: Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

[77] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[78] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.01.25	Title of the subject: VIRTUAL INTERACTIVE ARCHITECTURAL SPACE		
Cycle: 2nd	**Year of the study: 1st**	**Semester: 2nd**	**Number of ECTS credits: 3**
Status: Obligatory		**Total number of hours:** 45 (1+2) Lectures 15 Exercises 30	

Teaching staff	Teachers and associates elected in the field to which the subject belongs - Spatial and graphic representation with addition of the specialists in specific topics
Prerequisites:	Basic knowledge of the software for 3d modeling and graphic visualization
Aim (aims) of the subject:	Understanding and practical application of theoretical concepts and information models that connect the virtual, programmatic-functional and material dimensions of architectural space, with emphasis on visual and graphic aspects and interactivity of architectural space.
Content: ***(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)***	Lectures: Virtual space in architecture - from the abstract to the material dimension. Digitization, virtualization and hyper-materialization of space. Programming and information modeling of space - from sketch to plan, graphic and visual dimension of space. Dynamic information modeling of space. An interactive dynamic information space. Spatial intangible and temporal dimensions of architecture and information modeling. Creating computer information models of an architectural object in a virtual space. Different software solutions and specific application aspects of CAD, CAM and BIM information technology. Interactive user experience with integration of the real and virtual dimensions of space. Exercises: Exploring and creating a virtual dimension of architectural space, through the integration of space-time, visual and information structures. Modeling, visualization and dynamic presentation of objects that have significant spatio-temporal validity in a cultural or historical context. Application of software for modeling, visualization and user interaction.

Learning outcomes:	Knowledge: Ability to apply theoretical knowledge and practical modeling methods with the help of computer technology in the definition, modeling and representation of architectural objects and their dynamic spatio-temporal aspects. Skills: Ability to model information and represent specific spatial circuits related to the field of architecture, with an emphasis on the dynamics and interactivity of architectural space. Competencies: Ability to adequately integrate different software tools and computing methods with theoretical aspects of the multidimensionality of architectural space through its spatio-temporal dimensions.
Teaching methods:	Lectures - multimedia presentations and practical exercises. The exercises are performed as supervised work and in consultation. The tasks are group and individual and include work on modeling, visualization and dynamic presentation of arch. objects and esembles.
Assessment methods including grading structure :	The course grade is derived from the project assignment, which contains information and graphic-visual elements 50%, final oral defense and presentation grades 40%, and through student activity monitoring 10%.
Bibliography:	Obligatory: Rada Čahtarević, *Virtuality in architecture – from perspective representation to augmented reality*, The Scientific Journal Facta Universitatis, Series Architecture and Civil Engineering, Univerzitet u Nišu, Vol.6, No.2, 2008. 231-241 Branko Kolarevic, Post-Digital Architecture: Towards Integrative Design, *First International Conference on Critical Digital: What Matters(s)?*, 149-156. CDC. Cambridge, USA: Harvard University Graduate School of Design, 2008. Antoine Picon, Architecture and the virtual, Towards a new materiality, *Thesis*, Wissenschaftliche Zeitschrift der Bauhaus-Universität Weimar, (2003) Heft 3 Jun Tanaka, From (Im)possible to Virtual Architecture, The Virtual Architecture; The Difference between Possible and Impossible in Architecture, Tokyo university Digital Museum, Tokyo, 2000. Additional: Christiane Paul, 2015., From Immateriality to Neomateriality: Art and the Conditions of Digital Materiality , ISEA, 21st International Symposium on Electronic Art, Vancouver Heim, Michael, 1994. Mataphysics of Virtual Reality, Oxford University Press,

Course code: 01.03.65	Course title: ARCHITECTURE AND HEALTH 2		
Cycle: 2	**Year: 1**	**Semester: 2**	**ECTS points:** 6
Status: Elective		**Total number of hours: 90h** Lectures: 30 h Exercises: 60 h	
Teaching participants	**Teachers and associates selected in the field of the study/subject;** relevant teachers from other faculties and / or experts (upon invitation)		
Enrolment requirements:	/		
Course objective(s):	The objective of the course is to be familiarized with the definition of healthy urban environments (a scale of the community / neighbourhood and buildings), their characteristics and strategies for their development. Identification of the necessary steps to achieve effective plans for healthy communities and buildings within an urban environment. In professional terms, the goal is to master the methods and techniques available to architects in the design of specific environmentally friendly projects through the application of interdisciplinary knowledge and skills to all participants.		
Thematic units: (if necessary, the weekly performance plan can be determined by taking into account the specificities of the organizational units)	The implementation of the course is based on functional-organizational determinants and contemporary tendencies in planning and designing healthy urban environments (a scale of community / neighbourhood and building). 1. Principles that shape the idea of architecture 2. 'Healthy Architecture', 'Green Architecture' 3. Reviewing typologies in a built environment 4. An integrated approach to problem solving 5. Use of advanced technology in modern architectural process 6. Types of interventions in an existing built environment 7. Technology Transfer 8. Identification of key players in the field of healthy urban environment		
Learning outcomes:	**Knowledge:** Acquiring knowledge to participate in the planning and design of healthy urban communities and buildings (a benchmark of community / neighbourhoods and buildings). Knowledge of many different factors that affect the health of space users in a multidisciplinary approach.		

	Skills: Ability to create models of healthy cities / urban environments. Participation in the work of healthy community development teams (neighbourhood and building scale). **Competencies:** Ability to implement simple monitoring systems in an architectural space. Ability to participate in the work of teams on projects to preserve and improve the quality of life in a built environment.
Teaching methods:	Lectures & Multimedia; Laboratory work - individual tasks / supervised work; Work in simulation of architectural project studio with presentation and discussion of development of architectural conceptual solutions;
Knowledge assessment methods with grading structure[79]:	Students' knowledge is assessed on the basis of a successfully completed semester assignment - architectural project (50% of the total grade); Essay (20% of the total grade); Oral presentation (10% of the total grade); Practical skills - working in a laboratory (20% of the total grade).
Literature[80]:	Obligatory: - Barton, H., Thompson, S., Burgess, S., & Grant, M. (Eds.). (2015). *The Routledge Handbook of Planning for Health and Well-Being.* New York, NY: Routledge - Burdett, R., & Rode, P. (2018). (Eds). *Shaping cities in an urban age*. Berlin: Phaidon. - Leeuw, E. de., & Simos, J. (Eds.). (2017). *Healthy cities: the theory, policy, and practice of value-based urban planning*. New York, NY: Springer New York. Additional: - Barton, H., Mitcham, C., & Tsourou, C. (2003). *Healthy urban planning in practice: experience of European cities: report of the Who City Action Group on Healthy Urban Planning*. Copenhagen: WHO Regional Office for Europe. - Wagner, F. W., & Caves, R. W. (2020). *Community livability: issues and approaches to sustaining the well-being of people and communities*. Abingdon, Oxon: Routledge.

[79] The points structure and the scoring criterion for each subject are determined by the organizational unit council before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[80] The Senate of the higher education institution as an institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which it prepares and passes the exam by a special decision, which is obligatory to publish on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Sarajevo Canton

Course code: 01.03.69	**Course title: LIGHT IN DESIGN**		
Cycle: 2	**Year: 1**	**Semester: 2**	**ECTS points:** 6
Status: Elective		**Total number of hours: 30h** Lectures: 15 h Exercises: 15 h	
Teaching participants	**Teachers and associates elected in the field to which the subject belongs: architectural design/product design**		
Enrolment requirements:	/		
Course objective(s):	• Look at the process of designing with light and understand the impact of lighting on the urban landscape. • Introduce new technologies and appropriate lighting modeling tools. • Understanding of matter based on energy efficiency, light pollution and implementation of acquired knowledge in architectural design. • Develop awareness of the importance of energy efficiency in sustainable architecture and design.		
Thematic units: (if necessary, the weekly performance plan can be determined by taking into account the specificities of the organizational units)	INTRODUCTION 1. Light Fantastic; The Light of Reason (BBC film) 2. Architecture is a combination of art and science - on the example of light; Composition of Light (BBC film) TERMS AND BASIC PHYSICS OF LIGHT 3. The visible part of the spectrum; Dual radiation theory; Transmission, reflection, refraction; 4. Direct and diffused light; The color of light; Measuring characteristics of light LIGHT REVEALS ARCHITECTURE 5. Light and place; genius loci or the spirit of the place (film Louis Poulsen); Light and culture of habitation 6. Light, climate and weather; visual and psychological effect; light and thermal comfort; daily and seasonal changes of light (on the example of paintings by Claude Monet) 7. Light and form; Light and structures; Light and materials (acetalization and dematerialization) 8. Light and space; Light connects interior and exterior spaces; Focus, hierarchy, movement THE NATURE OF DAYLIGHT		

	9. Designing with the sun; concept, terms and basic physics of daylight 10. Daylight strategies, calculations, computer simulations ARTIFICIAL LIGHT 11. Light sources; lighting fixtures 12. Photometry and calculations: Relux; Dialux, CAD, ArchiCAD LIGHTING DESIGN 13. The concept of designing with light The art and science of light design; (LDA film); Design process; Design communication and documentation 14. Sketch design (parti); schematic drawings (part details); Case study LIGHTAPRO studio projects https://www.lightartpro.com/portfolio SMART LIGHTING 15. Master plan of urban lighting based on the example of Sarajevo STUDIO PROJECT students will be able to choose one of the projects of their own choice, which they will realize through work in the studio INTERIOR LIGHT DESIGN In an interior project of their own choice, students will learn the basic procedure of lighting the interior space. The project will include all phases of the conceptual lighting design project according to international standards. URBAN LIGHT DESIGN In the project of an outdoor space or object (street facade of the object, square, park, street) of their own choice, students will get to know the process of creating a project for lighting outdoor spaces. The project will contain all phases of the conceptual solution according to international standards.
Learning outcomes:	Knowledge: • Understanding the concept of light in architectural design • Mastering the specifics in designing with light • To realize the importance of understanding the physics of light in order to achieve art through the application of science.

	• To find out how to conceptually solve the problems of daylight and artificial lighting in interior and exterior spaces. Skills: • Mastering the technique of designing with light and creating space using light, as well as various techniques/skills that will be mastered/learned through work on the project. • The use of various design techniques to create space with light (light as a tool for creating space) • Developing the perceptual ability to feel light without the use of photometry and calculation. • Use of computer programs for the presentation of light in order to confirm the adopted techniques and knowledge through simple simulations Competences: • The ability to independently solve the problem of daylight and artificial lighting in a simple design project • Through the analytical and comprehensive research work students will be able to set methodological frameworks and to approach the problems of adaptability of lighting design realized through innovative technologies, energy efficiency and prevention of light polution
Teaching methods:	Lectures and project work in the studio. Oral presentation of material, work on visual materials - digital and video presentations. Practical work on the project. Group and individual analyses, corrections, discussions and project presentations.
Knowledge assessment methods with grading structure[81]:	Knowledge is tested through a practical part that includes work on a project and a theoretical part in the form of an exam, as well as engagement and attendance at the class. Class attendance 10% Class activity 10% Colloquium in the form of a presentation of a project in progress 25% Project presentations 25% Final exam: theory 30%
Literature[82]:	Obligatory:

[81] The points structure and the scoring criterion for each subject are determined by the organizational unit council before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[82] The Senate of the higher education institution as an institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which it prepares and passes the exam by a special decision, which is obligatory to publish

	Srdja Hrisafovic: Light in Design; Marietta Millet: Light Revealing Architecture; www.erco.com; https://www.erco.com/en/designing-with-light/lighting-knowledge/lighting-design/lighting-design-7628/; www.zumtobel.com Additional: Henry Plummer: Poetics of ligh; Henry Plummer: Light in Japanese Architecture; Tadao Ando: The Colours of Light; Urs Buttiker: Louis I. Kahn: light and space; Louis Kahn: Light is the Theme; John Lobell, Between Silence and Light; Richard Weston: Alvar Aalto; Francois Cali: Architecture Of Truth; Carl Gardner: Lighting Design; Janet Turner: Lighting, an introduction to light, lighting and light use. Urlike Brandi: Light for the cities; http://lightedu.eu/en/Roger-Narboni.html -

Course code:	**Course title: LIFE CYCLES OF THE BUILDING AND ITS ENVIRONMENTAL IMPACT**		
Cycle: 2	**Year: 1**	**Semester: 2**	**ECTS credits:** 3
Status: Elective		**Total number of hours: 3 hours per week / 45 hours per semester** Lectures 1 per week / 15 per semester Exercises 2 per week / 30 per semester	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs: architectural design/product design**		
Prerequisites:	None		
Aim (aims) of the subject:	Education in the field of sustainable construction with the aim of applying what has been learned in practice in order to prevent the negative environment impact of buildings. Getting to know the concept of the life cycle of a building and its importance in the construction industry, as well as getting to know the existing methods and tools for determining its impact on the environment. Defining the factors that influence the building industry to be in line with the linear or circular economy. The subject includes the approach and the method of collecting and processing input data about the building, the method of making sustainability and environmental impact studies, where we compare, evaluate and quantify factors.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The subject includes familiarization with the processes we go through when working on a project: design, realization, use, transformation and destruction/deconstruction of a building. Definition of the problem of the environmental impact of built structures. Sustainable Development Goals (SDGs) applied in construction. Life cycle of the building. Life cycle assessments - project's impact on the environment. Construction waste and how to reduce it. Circular construction and methods of measuring the impact of built structures on the environment. Existing methods and existing tools for measuring environmental impact. Examples of projects and LCA studies from practice.		
Learning outcomes:	Knowledge: Acquiring knowledge about factors in construction that affect the environment and how to minimize the negative impact of built structures. Skills:		

	Calculation of the impact of the building on the environment during its life cycle (LCA tools). Competencies: The student is competent to independently create a model in the LCA tool.
Teaching methods:	Theoretical part through lectures with PowerPoint presentation. Practical work through the creation of analyzes and models, adequately presented.
Assessment methods including grading structure [83]:	Knowledge is tested by assigning points for each activity and knowledge test during the semester, as well as at the final exam/presentation, where the final grade is determined. The knowledge test during the semester carries 30% of the grade (seminars, presentations, fieldwork). Successfully completed practical task, i.e. project 70% points in the grade structure. 10 (A) - (outstanding success, with no mistakes or with minor defects), carries 95-100 points, 9 (B) - (above the average, with a few mistakes), carries 85-94 points, 8 (C) - (average, with noticeable mistakes), carries 75-84 points, 7 (D) - (generally good but with significant disadvantages), carries 65-74 points, 6 (E) - (meets the minimum criteria), carries 55-64 points, 5 (F, FX) - (does not meet the minimum criteria), less than 55 points.
Bibliography[84]:	Adrošević, R. (2022). *Going toward Low waste External Walls of Residential Building in XXI Century in BiH, doktoral thesis.* Mulhall, D., Braungart M. and Hansen K. (2019). *Creating buildings with Positive Impacts.* TUM Durmisevic, E. (2019). *Circular Economy in Construction - Design Strategies for reversible buildings.* Netherlands. Đuranović, P. (2003). *Upravljanje građevinskim projektima*. Podgorica: Građevinski fakultet. *Normativi i standardi rada u građevinarstvu*-visokogradnja Valid legislation, rules and regulation in the field of building structures. Supplementary literature in relation to the specificity of each candidate's project. -

[83] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[84] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

SYLLABUS FOR THE SECOND YEAR, 3rd SEMESTER

Code: 01.05.13	**Title of the subject: ARCHITECTURAL PHISICS 2**		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 3**
Status: OBLIGATORY		**Total number of hours: 15 + 0 = 15** Lectures Exercises Field work	

Teaching staff	
Prerequisites:	
Aim (aims) of the subject:	Explanation of the essence of architectural physics as a scientific component of architecture, referring students to architectural solutions (disposition and materialization) whose validity can be accurately evaluated.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	According to the content of bligatory textbooks: Hadrović, A. (2010). *Architectural Physics, Second Edition*. Sarajevo: Faculty of Architecture of the University of Sarajevo. WEEKS: 1-4: Architectural acoustics (sound, sound effects, resonance, interference, storm waves, Doppler effect, directed sound source characteristics. SESSIONS 5-10: Sound tracking, conditions of good room acoustics, echo, horizontal and vertical room plan, sound absorber - types and tasks). SESSIONS 11-15: Noise, sources and noise flows, noise representation, noise barrier, standard fault, recommendations, standards - regulations.
Learning outcomes:	Knowledge: The student should be able to see architecture as the unity of its artistic and exemplary-empirical components. Skills: With the use of the appropriate soware, the student is able to create a budget for securing the required performance of the architectural space in terms of ensuring the comfort of the people in them. Competencies: With the admission of an appropriate exam conducted by a national community or an appropriate domestic or foreign institution (licensing), the student is able to gain access to this exam without further training.
Teaching methods:	Lectures with projections that follow the subject matter.
Assessment methods including grading structure [85]:	Lecture and exercise monitoring 5% Individual (seminary) workshop 95%
Bibliography[86]:	Required: Hadrović, A. (2010). Architectural Physics, Second Edition. Sarajevo: Faculty of Architecture of the University of Sarajevo. Supplementary: Goscle, K., Schule, W. (1978). *Zvuk, toplota, vlaga*. Belgrade: Gradjevinska knjiga.

[85] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[86] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Morfey, C., (2001). Dictionary of Acoustics. Academic Press Sabine, W. C.,(1922). Collected papers on acoustics. Harvard University Press. Templeton, D., (1993). Acoustics in the Built Environment: Advice for the Design Team. Architectural Press.

Code: 01.04.40	**Title of the subject: THE CITY AND MAN**		
Cycle: 2nd	**Year of the study: 2**	**Semester: 3rd**	**Number of ECTS credits:** 2
Status: OBLIGATORY		**Total number of hours: 30**	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs**
Prerequisites:	-
Aim (aims) of the subject:	Understanding different sociological aspects of city phenomenon, urbanization, basic conceptions and typologies of cities, their historical development, or understanding of the city's genesis from its beginning to modern, through postmodern to non-modern, bearing in mind the importance of the two-way influence and communication between man and the city. Through the study of matter, sublimate and re-examine the previously acquired knowledge of urban planning, and the spatial relationships of urban centers and settlements, interrelated different functional zones, as well as the contemporary problems of fuction of the city in the postindustrial era with all spatial, sociological, ecological burdens inherited during the period from the formation of the city till today.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Sociology of settlements: significance and definition (indications of the terms stated in the goal); space and society; 2-4 The city and its planned development, through different periods: ancient, feudal, industrial cities; 5 Sociological aspect of formative and generative factors in the analysis of the city; 6 – 8 Processes in the city: domination, gigantism, destruction, massage; 9. Urban sociology and planning (approaches and conceptualization of planning); 10. Definition of the level of space from privacy, anonymity to semi-competitiveness and the public; 11. Social integration and disintegration in the urban area; 12. Perspectives of social space from urban communities; 13 – 14. Problems of the faction of the city in the 21st century; 15. Modern trends in city governance;
Learning outcomes:	Knowledge: Adoption of theoretical knowledge of the relationship between man and the city from its foundation until today

	Skills: Acquiring the capability of brutal review and commenting on the phenomenon of the city and its affectionate relation to man, society, and the time distance of its origin and genesis, with an assessment of the present state of the city. Competencies: Involving in the teaching of the knowledge of experience from different segments and angles of functioning and use of the city, an introdisciplinary approach in the thinking of the city
Teaching methods:	Lectures are obligatory and organized as a combination of informative and interactive classes. Apart from active participation in the teaching process, each student should prepare the thematic assignment. Students present their results in the pptx format in the form of discussion.The scope of work within the subject matter is dimensioned in relation to the envisaged fund hours the student should use to prepare this work
Assessment methods including grading structure [87]:	The grade from the course is 60%, the theoretical knowledge check through one semester test or an integral exam-30% and student activities-10%.
Bibliography[88]:	Obligatory: Čaldarević O., „ Urbana sociologija“, (Globus, Zagreb, 1985.) Kečkemer D., „Grad za čovjeka o dehumanizaciji savremenog urbanizma“, (Zagreb, 1981.) Doksijadis K., „Čovek i grad“, (Nolit, Beograd, 1982.) Mumford L., „Grad u istoriji“ (Book&Marso, Beograd, 2006.) Marinović-Uzelac A., „Socijalni prostor grada“, (SNL, Zagreb, 1978.) Gehl J., “Gradovi za ljude”, (Palgo, Beograd, 2016.) Vresk M., „Grad i urbanizacija“, (Školska knjiga, Zagreb, 2002.) Jackobs J., „The Death and Life of Great American Cities, (New York, „Modern Library, 1992.)

[87] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[88] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Stupar A., "Grad globalizacije_izazovi, transformacije, simboli", (Orion art, Beograd, 2009. (vol. I).) Benevolo L., "Grad u istoriji Evrope", (Clio, Beograd, 2004.) Schenk L., “Designing Cities”, (Birkhauser, Basel, 2013.) Elin N., "Postmoderni urbanizam", (Orion art , Beograd, 2004. (vol. I)) Additional: Development strategies of the city and municipalities, Literature in accordance with the selected theme of seminar work

Code: 01.04.06	**Title of the subject: URBAN DESIGN 6**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: Obligatory		**Total number of hours:** 60 Lectures 15 Exercises 45 Field work	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Introducing students to the methodology of active design process of transformations – learning about phases of an urban design project; Analysis and valorisation of urban matrices (factors influencing transformations, indicators, criteria, valorisation methods, typology – examples); Acquiring experience in field work (surveying users of space, the in situ application of theoretical instructions, recording the collected data, visits to the relevant institutions: an insight into an appropriate spatial-planning documentation);
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Kinds of urban transformations; An overview of urban redesign developmental periods; Urban design theories: Schools of urbanism – Models of the projected city construction; Kinds and factors of transformation processes: An overview of ideas – Urban development alternative theory; Adhocism and pragmatism in the approach to work on real assignments, for the purpose of recognising the need for transformations and for the purpose of valorisation of a real urban space; Ethical and culturological consequences of an urbanist-designer's activities; Urban design project and the relationship with the plans of a higher order.
Learning outcomes:	Knowledge: Theoretical and practical solving of urban transformation issues, useful for the future urbanists – designers; Understanding the consequences of inadequate articulations of ideas and concepts of transformations, as well as possibilities of their solving; Skills: Understanding the need for transformations and a possibility of foreseeing the future system functioning from the aspect of the observed (positive) processes of generating structures and functions, realisation of harmony

	with ambience, way of life, culture, sustainable development; Competences: Understanding the role of urbanist-designers and culturological consequences of their activity.
Teaching methods:	The theoretical part (lectures and individual consultations) and the practical part (practical classes – creating a conceptual urban design project of transformations at a selected complex); Field work.
Assessment methods including grading structure [89]:	Partial evaluation (two tests during the semester which consist of a graphical conceptual design of the transformation - I: 10-15% and II: 10-20%), graphical conceptual design of the transformation (25-35%) and the final exam which focuses on testing knowledge acquired in the theoretical section (10-20%); The final grade consists of students activities in the classroom (5/10%), grades achieved at the graphical part and at the final exam. A positive grade in the conceptual design of a transformation which is a precondition for the final written exam. If the student, during the semester, achieves the maximum number of points in the graphical part, he does not have to access the theoretical part of the exam.
Bibliography[90]:	Obligatory: Čakarić, J, Urbanističko projektovanje 6 – Skripta, Arhitektonski fakultet u Sarajevu, 2013 Bacon, N. E, Design of Cities, M.I.T. Press, Chicago, 1978 Castex, J, Depaule, J. C. i Panerai, P, Urbane forme, Građevinska knjiga, Beograd, 2002 Choay, F, Urbanizam, utopija i stvarnost, Građevinska knjiga, Beograd, 1978 Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Čakarić, J, Doktorska disertacija: Voda u „ideji“ grada. Poseban osvrt na transformaciju i kontekst, Arhitektonski fakultet, Sarajevo, 2010 Jencks, C, Moderni pokreti u arhitekturi, Građevinska knjiga, Beograd, 1988 Elin, N, Postmoderni urbanizam, Orion art, Beograd, 2002 Mumford, L, Kultura gradova, Mediterran Publishing, Novi Sad, 2010 Norber-Schulz, C, Intencije u arhitekturi, Naklada Jesenski i Turk, Zagreb, 2009

[89] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[90] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Rossi, A, Arhitektura grada, DIP "Građevinska knjiga" i PP "Premis", Beograd, 2002 Additional: Cook, P, The City, Seen as a Garden of Ideas, Peter Cook and The Monacelli Press, Inc., New York, 2003 Kostof, S, A History of Architecture. Settings and Rituals, Oxford University Press, Inc, Oxford, New York, 1995 Krier, R, Gradski prostor u teoriji i praksi, Građevinska knjiga, Beograd, 1999 Woods, S, The Man in the Street, Penguin Books, London, 1975

ELECTIVE MODULES IN 3rd SEMESTER

Code: 01.03.54	**Title of the subject: ARCHITECTURAL COMPOSITIONAL REDEFINITION**		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 10**
Status: Elective ELECTIVE MODULE		**Total number of contact hours: 90 (60 lectures + 30 practical classes)**	

Teaching staff	Teachers and associates elected in the field- Department for Architectural Design
Prerequisites:	Advantage is given to students who obtain a higher average grade in the following subjects: Architectural compositions 1, Architectural compositions 2, and Architectural competitions
Aim (aims) of the subject:	Enabling students of the acquired knowledge that is manifested through a positive evaluation of the proposed solution to the problem.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Candidates should, in their own discretion, choose a "problematic" locality within the existing physical structure where, from the point of view of content (functional) organisation or visual aspect, creative interventions are necessary in the sense of architectural redefinition or redesign. These interventions primarily entail reshaping, as well as elimination of objects or sections of objects that significantly disturb architectural-urbanistic harmony. Through systematic analysis of ambience and the existing structures, architectural compositional redefinition and redesign are necessary, as well as initiation of a "dialogue" between functional-constructive and designing-visual aspect.
Learning outcomes:	Knowledge: While working on the research in the field of elective module of Architectural compositional redefinition students explore, analyse and criticise the chosen theme by using the relevant scientific and research methods. Skills: Through the practical part of education students will be able to plan, prepare and perform theoretical exploration project which will ultimately result with detailed project plan and brief for the proposed design concept on the selected topic. Competences: Successful application of the acquired knowledge that is manifested through a positive evaluation of the proposed solution to the problem.

Teaching methods:	Lectures and individual work supervised by the mentor, including discussions, corrections and consultations with other professors when necessary.
Assessment methods including grading structure[91]**:**	Presentation of results obtained in analytical and project part of the assignment – project defence.
Bibliography[92]**:**	Obligatory: 1. Calkins, Meg. 2009. Materials for sustainable sites: a complete guide to the evaluation, selection, and use of sustainable construction materials. Hoboken, N.J.: Wiley. 2. Fraser, Reekie R. (1972), Design in the built environment first edition, Edward A. Publication, London. 3. Gamble, Paul R., and John Blackwell. 2001. Knowledge management: a state of the art guide: models & tools, strategy, intellectual capital, planning, learning, culture [and] processes. London: Kogan Page. 4. Hinte, Ed van, Césare Peeren, and Jan Jongert. 2007. Superuse: constructing new architecture by shortcutting material flows. Rotterdam: 010 Publishers. 5. Lawson, Bryan (1997), How Designers Think: The Design Process Demystified 1st edition. Sheffield, Architectural Press. 6. Lynch, Kevin, and Michael Southworth. 1990. Wasting away. San Francisco: Sierra Club Books. 7. 2000. Let's reduce, reuse, and recycle. Washington, DC: U.S. Environmental Protection Agency, Solid Waste and Emergency Response. 8. USGBC. 2003. Reference Package for new Construction & Major Renovation. In LEED-NC Version 2.1, edited by L. i. E. E. Design. Additional: – Depending on the individual assignment.

[91] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[92] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of theresults of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.02.34	Title of the subject: ARCHITECTURAL INTERVENTIONS IN A HISTORICAL URBAN CONTEXT		
Cycle: 2nd	**Year of the study: 2**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Department for Theory and History of Architecture and Protection of Architectural Heritage
Prerequisites:	All obligatory courses and exams of the Department - Theory and history of architecture and protection of heritage completed from the previous year 1st of the II cycle.
Aim (aims) of the subject:	Enabling students for theoretical and analytical preparation that preceded the practical architectural assignement – design within a historic urban context.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Preparatory phase: Introductory lectures, protection methodology for objects and ambience assemblies; Analytical phase: individual selection of locations, architectural overview of the situation in the field with identification cards and the existing state maps; The phase of synthesis: Valorisation and evaluation of the assembled data, selection of micro locations; Research and preparation of the programme assignment; Work on a study as a preparatory project phase for the final diploma thesis.
Learning outcomes:	**Knowledge**: Students will acquire the knowledge necessary to analyze the elements that influence architectural / urban interventions in historical tissue. **Skills:** Analysis and valorization of the environment / context, understanding of natural, urban-architectural and symbolic parameters that affect the chosen site. Application of basic methods in scientific research work **Competences**: Students will be able to analyze and evaluate the context and design in the complex conditions of urban historical fabric.
Teaching methods:	Individual work with the students, lectures.

Assessment methods including grading structure [93]:	Analytical phase – graphical contributions – 100% of the grade.
Bibliography[94]:	Obligatory: /Additional: Individually based recommendations for literature, due to the nature of the course that is emphasized in methodological research Brent, B, C, Arhitektura u Kontekstu, IRO Gradjevinska knjiga, Beograd (Belgrade), 1985 Ballard Bell, V, Materials for Architectural Design, Laurence King Publishing Ltd, UK, London, 2006 Feilden, M.B, Conservation of Historic Buildings, Reed Publishing, Frampton, NY, 1994 Kenneth, E, Towards a Critical Regionalism, Six Points for an Architecture of Resistance, In The Anti-Aesthetic: Essays on Marasović, T, Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985 Liane, L., & Tzonis, A, Why Critical Regionalism Today?. Architecture + Urbanism, 1994 Kostof, S, The City Shaped. Urban Patterns and Meanings Trough History, Thames&Hudson, Ltd, London, 2001 Krier, R, Gradski prostor u teoriji i praksi, Građevinska knjiga, Beograd, 1999 Lynch, K, Slika jednog grada, Građevinska knjiga, Beograd, 1974 Norber-Schulz, C, Genius loci, AE, London, 1979 Marasović, T, Zaštita graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983 Norberg-Schulz, C, Genius Loci: Towards a Phenomenology of Architecture, 1980 Pearce, D, Conservation Today, Butler and Tanner, London, 1989 Radović, R, Forma grada, osnove teorija i praksa, Treće izdanje, Građevinska knjiga, Beograd,2009 Stan, A, Points and Lines; Diagrams and Projects for the City; Princeton Architectural Press, 1999 Tschumi, B, Arhitektura i disjunkcija, AGM, Zagreb,2004 Tschumi, B, Event - Cities 3 (Concept vs. Context vs. Content). MIT Press, Boston, 2005 Unwin, S, Analyzing architecture, London: Routledge,2009 UNESCO and ICOMOS documents.

[93] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[94] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.41	Title of the subject: SPECIAL PURPOSE ARCHITECTURE AND HOUSING		
Cycle: 2nd	Year of the study: 2	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field- Department for Aechitectural Design**
Prerequisites:	-
Aim (aims) of the subject:	The goal is to enable every candidate to choose a project or a theoretical assignment within the widest scope of housing issues; multi-storey buildings of different typology + integral content (socialisation area; recreation; services; business-commercial content, garages…); individual and residential buildings; social standard objects (child institutions, pupil and student dorms, objects for the elderly persons, safe houses, convents, juvenile delinquent correctional facilities, prisons…); temporary housing objects and hospitality industry (hotels, motels, hostels, tourist settlements, camps…); objects of various content – as proposed by the students.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Programme aspects of defining assignments selected by the candidate: Identification of the existing state: spatial-physical context (natural and artificial), climatic characteristics (insolation, wind rose, precipitation), natural morphology (terrain-slope-bearing capacity-vegetation…); urban morphology (construction system-density-matrix…); traffic: pedestrian, vehicular – in movement, parking spaces, communal infrastructure equipment, culturological (social, economic) context, social-cultural conditions (needs, interests, values), social contacts, architectural-designing section of defining the programme, constructive section, physical section.
Learning outcomes:	Knowledge: By successfully mastering the content of this subject, students gain theoretical and practical knowledge about designing buildings with special purpouse. Skills: Students adopt design skills, project planning and organization, and presentation and communication skills. Competences: The student is competent to use basic scientific research methods (inductive and deductive, comparative, historical, descriptive ...), which she/he uses in a studious and structured way in the theoretical segment of work and then elaborates and draws conclusions. In the practical segment of the student the student adopts integrated knowledge in various fields from a functional, constructive and formative aspect and applies it in the conceptual analytical approach of the selected thematic area.
Teaching methods:	Every candidate proposes a theme in the field approved by the mentor. The work is individual, accompanied by lectures, discussions,

	corrections, participation of other teaching staff, field work, workshops, etc.
Assessment methods including grading structure [95]:	Overall activities of students are graded, as well as the analytical section of the work and the degree of completion of the architectural concept, with a conclusion whether or not it can be extended to the final diploma thesis. If the conceptual design is accepted, it will be considered an introduction to the final diploma thesis. Alternatively: a student is able to choose a new topic for the final diploma thesis.
Bibliography[96]:	Obligatory: Bajlon, M. (1986). Upotrebna vrijednost stana. Belgrade: Arhitektonski fakultet. Kara-Pešić I., Petovar, K. (1985). Neposredna okolina stambenih zgrada. Belgrade: Centar za stanovanje IMS. Klein, R. (1978). Sudjelovanje korisnika u oblikovanju stana. Subotica: Građevinski fakultet. Knežević, G. (1986). Višestambene zgrade. Zagreb: Liber. Knežević, G. (1994). Fleksibilnost i participacija u stanogradnji. Zagreb: Tehnička knjiga. Additional: Literature related to the subjects: Design 2., 3. i 4., Specific Housing, Preschool buildings.

[95] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[96] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.05.40.	**Subject title: ENVIRONMENTALLY SOUND DESIGN**		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of credits: 10** (according to ECTS)
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff:	Teachers and associates engaged in the scientific field "Architectural Structures and Building Technology"
Enrolment requirements:	Enrolment in the second year of the second study cycle.
Subject objective(s):	Understanding and recognizing the parallel existence of a new and existing in the architectural ambience and detail. Introducing a student into an integrated approach to creating an environmentally compliant architecturally defined space. Understanding and applying the principle of integrity in making complex design decisions that are in a multi-layered, mutually dependent relationship. Raising awareness of the parallel existence of a new and existing in the overall environment. The emphasis is on establishing relationships in the wider area - both between buildings themselves and between buildings and the environment, in order discover and study the objective possibilities of including built structures in the existing environment.
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*	• Principles of an integrated approach by specifying the relationship between basic stages of Architectural Delivery Process (ADP): Architectural programming - defining problems; Architectural Design – problem solutions; Construction; Maintenance and Use of ADP. Systematization of requirements that newly built structures must meet regarding the environment, starting from the urban-spatial context (wider coverage and narrow locations), constructive and materialization possibilities, functional, aesthetic, bioclimatic, geomorphological, ecological and other relevant aspects. • Individual tasks based on determined spatial relationships, based on the study of environmental components, their interpretation and application in the emerging environment; • The proposal of the problem that is planned to be investigated and solved - coming from the fact that the building is always a part of a wider whole, that it intends to satisfy beneficiaries, and that it reflects the needs of the society and the time in which we live; Gathering data necessary for the analytical phase of work; Drawing and analysing relevant facts; Conclusion by the synthesis.
Learning outcomes:	Knowledge: Mastering the integrated approach to creating a built environment. Ability to include all previously acquired knowledge in the field of architectural profession; thus recognizing and respecting the interdependence of the various parts that make up the whole of the new architectural space in interaction with the given environment. Skills: Competence for independent professional work in the field of architecture and urban planning, programming, design and production of technical documentation in accordance with the regulations and rules of the profession. Competencies: Independent work on the architectural design - the stage of the conceptual project.
Teaching methods:	Lectures and interactive discussion, working on concrete examples.

Knowledge assessment methods with grading structure[97]:	The grade from the course is based on the activities in the module, the quality of preparation for the development of the theoretical part of the final work, as well as the applied methodology of research, presentation and defence of work. (Attendance and participation in the discussion 49%), creation, presentation and defence of the proposed solution of the set problem - 51%.
Literature[98]:	Required: • *Interpolacija (1983..)* Arhitektura – časopis saveza arhitekata Hrvatske broj 184-185, godina XXXVI. Zagreb • Bijedić, Dž. (2012). *ARHITEKTURA: Holizam umjesto optimalizacije - Integralni pristup u arhitektonskom stvaralaštvu*, Sarajevo: Univerzitet u Sarajevu, Arhitektonski fakultet. Additional: • Bovil, C. (1991). *Architectural Design – Integration of Structural and Environmental Systems,* New York :Van Nostrand Reinhold, • Brand, S. (1994.) *How Buildings learn: What happens After They're Built*, London: Penguin, • Hinkle, L. E., Loring, W. C. (1977.). *The Effect of the Man-made Environment on Health and Behavio.,* Atlanta, GA: Center for Disease Control, Public health Service, US Department for health, Education, and Welfare, • Holgate, A. (1992.). *Aesthetics of Built Form,* London: Oxford University Press, • Kurokawa, K., (1991.). *Intercultural Architecture, The Philosophy of Symbiosis,* London: Academy Editions, • Papanek, V. (1995.). *The Green Imperative -Ecology and Ethics in Design and Architecture,* Thames and Hudson, • Ostala stručna literatura ovisna o individualnom zadatku

[1] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[98] The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it mandatory publishes on its website

Code: 01.03.35	Title of the subject: INTERIOR ARCHITECTURE AND DESIGN		
Cycle: 2nd	Year: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field/Department of architectural design / consultations (2 hours) with teachers specialized in relevant fields associated with the project theme
Prerequisites:	In accordance with the guidelines and results of the official elective courses selection poll.
Aim (aims) of the subject:	Theoretical and practical introduction to the complex issues of interior and design of furniture that encompasses analytical and a comprehensive research activities in the selected field. Such conceptual research, which includes historical method with comparative and inspiring examples of interior solutions with furniture design becomes an organic part of an applicative final diploma thesis in the upcoming semester.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	A reconstruction and adaptation project of the existing public or housing object for a new or the existing purpose; Interior of the newly-designed public or housing object; The specific purpose exhibition stand project for domestic or international fairs; The scenography project in closed or open space for a cultural manifestation; Interior design project also contains the design segment for internal equipment and furniture elements, as well as a physical model of the selected section of object interior.
Learning outcomes:	Knowledge: Exploration, analysis and critical assessment of the topic selected by the students within the field of interior design, using the relevant scientific and design methodology. The learning outcomes include the definition of research and design objectives and project brief, emphasizing the students' contribution to the selected research area. Skills: The students will be able to plan, prepare and perform the theoretical exploration and research, which will ultimately result with detailed project brief and design analysis of the proposed design concept, on the selected topic. Competences:

	The students will be able to apply the fundamental research and design methodology (inductive, deductive, comparative, historical, descriptive methods) in an elaborate and structured manner, which will lead to conclusion making process. In practical section of the work, the student will integrate knowledge acquired from various disciplines and perspectives (structural, functional and design aspects) and apply them in the study of the selected topic or design problem.
Teaching methods:	Lectures – multimedia presentations and practical classes associated with the selected thematic area.
Assessment methods including grading structure [99]:	Grade is obtained from the research project 90% and student participation 10%.
Bibliography[100]:	1. Pile John:A History of Interior Design, 2005.; Sparke Penny: 2. A Century of Design: Design Pioneers of the 20th Century,1998.; 3. Cerver Francisco: Interior Design Atlas, 2000.; 4. Zevi Bruno: Povijest moderne arhitekture, 2006.; 5. Encyclopedia of Interior Design, urednica Banham Joanna, 2015.; 6. Watkin David, A History of Western Architecture,2005.; 7. Salihović Erdin: Povijest enterijera i dizajna namještaja na razmeđu manualnog i industrijskog 8. koncepta: Od Arts and Craftsa do Art Decoa, 2016.; 9. Abercrombie Stanley & Whiton Sherrill: Interijeri, Arhitektura, Dizajn-Povijesni pregled, 2016. 10. Panero, Joseph; Zelnik, Julius; DeChiara, Martin, TIME-SAVER STANDARDS FOR INTERIOR DESIGN AND SPACE PLANNING, McGraw-Hill, 2001.g. 11. Schittich, Christian (ed). IN DETAIL INTERIOR SURFACES AND MATERIALS AESTHETICS TECHNOLOGY IMPLEMENTATION, 2008.

[99] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[100] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code of subject: 01.02.27.	**Name of subject: INTERVENTIONS IN AMBIENTIAL FACILITIES METHODS OF PROTECTION OF A BUILDING PLACE**		
Cycle : 2nd	**Year of study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Participants	**Teachers and associates elected in the domain to which the subject belongs** Field of theory and history of architecture and preservation of cultural heritage
Pre-requisite for enrollment:	All previous obligations on the subjects of the Department of Theory and History of Architecture and the protection of the architectural heritage have been completed.
Goal (objectives) of the course:	Historical Concept: Contributing to the preservation and development of the cultural and historical heritage of Bosnia and Herzegovina through the work on objects and sites of a monumental character in Bosnia and Herzegovina, which require interventions according to the methodology of protection of the architectural heritage. Theoretical concept: Training students to work on international projects in the field of architectural heritage conservation. Get to know the current world trends in preserving the world's cultural heritage registered on the UNESCO World Heritage List. Practical concept: Introduction to the traditional values of the national heritage and the implementation of the research and documentation phase with the development of a feasibility study on specific tasks based on the BiH architectural heritage.
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units))*	Preparation phase for the selection of individual tasks: Analytical phase of the project (recording, defining and valorizing wider space) (3 weeks); Choosing methods and methodology. (12 weeks) Work on the development of the idea: Structuring the work through the active protection procedure to the original and existing state. Elaboration of adopted information from the given location; Presentation of the acquired knowledge.
Learning outcomes:	**Knowledge:** Acquisition and deepening of knowledge in the field of protection of the architectural heritage, as well as familiarization with the characteristic elements of a

	certain environment, respecting the scale, volume, proportion, materialization and construction, as well as characteristic details. **Skills:** Application of knowledge and skills in the field of protection of the architectural heritage in working on projects in practice. Considering that this is a module teaching, November acquires the skills of rational acting and reasoning in a precisely defined environment. **Competencies:** Orientation of students within the field of protection of the architectural heritage enables them to create competences based on the adoption of methodological procedure, methods of protection, valorisation and layered process of implementing the most up-to-date methodology through the original, existing and newly projected state.
Methods of teaching	Students in a group of up to six people individually develop a project. Given the objectives of the course, students should have an active knowledge of English language and knowledge of architectural computer software. Lectures and interactive analysis of all aspects of the project.
Knowledge testing methods with a rating structure[101]:	Exercises - semester assignment - 25-40% Activity - 0-10% Final exam - 30-50%
Literatura[102]:	**Required:** Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonara, G., Tesi di Restauro (1982-1985), Universita degli studi di Roma "La SApienza", Roma, 1986. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh Akšamija, L., Arhitektura svrhe, Arhitektonski fakultet, Sarajevo, 2010. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015.

[101] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[102]The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

	Chabbouh Akšamija L., Šabić L., Tradicionalna travnička kuća, Zavičajni muzej u Travniku, Arhitektonski fakultet, Sarajevo, 2018. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., Zaštita graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Pane, R., Citta antiche edilizia nuova, Edizione Scientifiche Italiane, Napoli, 1959. Protection et animation culturelle des monuments, sites et villes historiques en Europe, Commission allemande pour l'UNESCO, 1980. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.03.43	Title of the subject: PUBLIC BUILDINGS		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**
Prerequisites:	-
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and morphological character of public buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of public buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the public buildings of the average complexity.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of public buildings; 2. Contemporary principles of organizing public buildings; 3. Spatial-functional groups and spatial configuration of public buildings; 4. Urbanistic, architectural and ambient aspects of the planning of public buildings; 5. Architectural programming of public buildings; 6. Analysis of architectural types and functional-spatial units of public buildings.
Learning outcomes:	**Knowledge:** programming and architectural design of public buildings. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the public building develops through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. **Competences:** The student is able to create the conceptual architectural project of the public building of the average complexity, based on the integrated knowledge from several previous professional subjects, simultaneously mastering the design conceptual and technical-methodological basics of architectural design.

Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [103]:	Students are assessed through successfully executed practical assignments (70% of the grade); Presentations (20% of the grade), Project design defense (20% of the grade).
Bibliography[104]:	**Obligatory:** Current professional and theoretical literature in the field of architectural design of public buildings. Picard,Q., RIBA, The Architects Handbook, Blackwell, 2002; Neufert,E., Arhitects' Data, Blackwell Science, Third Edition, 2000 De Chiara, J., Crosbie J.M., Time-Saver Standards for Building Types, McGraw-Hill, Fourt Edition, 2001 **Additional:** Recent Architectural Magazines, Books about Architecture, Urban planinng, Urban design and Landscape, Architectural Design Manuals and Monographs of Architects

[103] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[104] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.05.34	Title of the subject: KINETIC, INTERACTIVE ARCHITECTURE AND DESIGN		
Cycle: 2nd	**Year of the study:** 2nd	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field/ Department of Architectural Constructions and Building Technology/ consultations (2 hours) with teachers specialized in relevant fields associated with the project theme.
Prerequisites:	Students with a higher average grade from the Department for Constructions and Building Technology are given an advantage.
Aim (aims) of the subject:	Students are introduced to the complexity and current themes in kinetic architecture design, enriching thus their previously acquired knowledge. Interactive architecture is conceived so that is prone to changes and adjustments to the variable climatic characteristics of an ambience, as well as its needs and functional demands (from individual components, structures, to the controlled transformations of shape and size). Multi-layered transparent structures adaptability analysis from the point of view of energy quality, technical, functional and formative characteristics.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction to the working methodology, on the basis of the thematic framework defined in the project module. The candidate proposes a research aspect and outlines the project programme structure (the project assignment) at a concrete location, with the application of kinetic architecture principles for a newly designed public building, or at a redesigned and rehabilitated existing structures. Methods of collecting data and the methodology of work. Analytical phase of the project: natural and environmental climate conditions, urban context, historical and energy context, as well as analysis of principles and precedents of kinetic architecture.
Learning outcomes:	Knowledge: The aim of the work and the expected contribution is that the student, with a comprehensive research and analytical approach, masters the basic scientific-research methods and elaborates the adopted knowledge and principles of kinetic, interactive architecture and design. This should result to

	more creative solutions of architectural ideas but according to sustainable design strategies. Skills: During the module, the student explores, prepares and realizes the theoretical research segment of the project with a detailed project assignment, which in the final phase results in an architectural concept in the selected thematic field. Competences: The student is competent, through the analytical and comprehensive research work segments, to set methodological frameworks and to approach the problems of adaptability of architectural structures realized through innovative technologies, materials and components (nano technology, technologies inspired by nature, photosensitive materials, photovoltaic modules, controlled and innovative involvement of light and solar energy, adaptable envelope..).
Teaching methods:	Interactive classes, individual work with students, consultations and discussions.
Assessment methods including grading structure [105]:	Students are graded through presentation, explanation and discussion of the final analytical and graphical part of the work - project in front of a comitee.
Bibliography[106]:	Obligatory: Bell, V. B., & Rand, P. (2014). Materials for Design 2. New York: Princeton Architectural Press. Blum, H.-J., Compagno, A., Fitzner, K., Heusler, W., Hortmanns, M., Hosser, D., . . . Sedlacek, G. (2001). Doppelfassaden. Berlin: Ernst & Sohn. Compagno, A. (2002). Intelligent Glass Façades: Material, Practice, Design. Basel: Birkhäuser. Philips, D. (1971). Osvetljenje u arhitektonskom projektovanju (M. J. Maksimović, Transl.). Beograd: Građevinska knjiga. Fortmeyer, R., & Linn, C. D. (2014). Kinetic Architecture: Designs for Active Envelopes. Mulgrave: Images Publishing Group. Fox, M., & Kemp, M. (2009). Interactive Architecture. New York: Princeton Architectural Press. Hadrović, A. (2008). Bioklimatska arhitektura - traženje puta za raj. Sarajevo: Arhitektonski fakultet.

[105] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[106] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Hauser, G. (Ed.). (1988). Bauphysik. Berichte aus Forschung und Praxis. Stuttgart: Frauenhofer IRB Verlag. Kronenburg, R. (2007). Flexible: Architecture That Responds to Change. London: Laurence King Publishing. Salihbegović, A. (2019). Transparentne ovojnice i materijali u arhitekturi. Sarajevo: Arhitektonski fakultet Univerziteta u Sarajevu. Schittich, C., Staib, G., Balkow, D., Schuler, M., & Sobek, W. (1998). Glasbau Atlas, Basel, Boston, Berlin: Birkhauser. Sobek, W. (Ed.) (2002). Bauen Mit Glas. Stuttgart: Wirtschaftministerium Baden-Wuttemberg. Wigginton, M. (1996). Glass in Architecture. London: Phaindon Press Ltd. Wurm, J. (2007). Glass Structures: Design and Construction of Self-supporting Skins. Basel: Birkhäuser.

Code: 01.01.23.	Title of the subject: COMPLEX DYNAMIC FORM AND VIRTUAL SPACE IN ARCHITECTURE		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODUL		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field to which the subject belongs - Spatial and graphic representation
Prerequisites:	-
Aim (aims) of the subject:	The goal of the module is preparation for the development of the master's thesis (the final diploma thesis), through individual engagement, where a student connects all previously-acquired knowledge and skills, with the help of a mentor and a consultants. The aim of this specific module is application of theoretical aspects of concepts of complex form and investigation of possibilities they offer in shaping of space and architectural design.
Content:	On the basis of open spatial and thematic framework proposed by the mentor, a student chooses the research aspect and sets the programme structure of the project. A student should define the project assignment/thesis/, which will serve as a basis for realisation of the project. The relationship of the thesis towards the contemporary tendencies and trends in architecture, are based on the new spatial conceptions, complex dynamic morphology and computational paradigm and concept of complex form and virtual space, as well as critical awareness through analysis of the specific contemporary trends in architecture. The paper implies research and definition of a project assignment / written thesis, which in future work can be developed as a thesis of a theoretical or theoretical-applied thesis.

Learning outcomes:	Knowledge: Through research of the potentials of new theoretical principles and technological possibilities related to the digitization of architectural form, and complex dynamics as a thematic concept,the integration of knowledge from different fields results in the application of the conceptual approach to the chosen topic of the diploma thesis. Skills: Planning, preparing and realizing the theoretical research project, which in the final phase results in a detailed project assignment. The candidates are expected to find their original views and to transfer their general theoretical and expert knowledge to the proposal of a master thesis and project. Competences: Using the basic scientific-research method in the theoretical segment of work, from which the elaborate concept of the topic of diploma work is elaborated, the project task and the conceptual idea based on the previous research is created.
Teaching methods:	An individualized approach to integrated lectures and exercises.
Assessment methods including grading structure :	A candidate defends the thesis before the mentor after the 9th semester, and is eligible to begin the realisation of a concrete project only after approval of the thesis. The grade of the subject is derived from the evaluation of student activities - 10%, textual analysis and project study through analysis and synthesis of the topics of master thesis proposal- 70%, and presentation of work - 20%.

Bibliography:	Obligatory: Čahtarević, R. (2008). Univerzalnost kompleksnosti. Od geometrijskoga prostornog koncepta modernizma do suvremene arhitektonske forme. Prostor, 1[35] 16[2008]. 64 – 75. Retrieved from: http://www.arhitekt.hr/prostor/Lists/lanci/DispForm.aspx?ID=405 Delanda, M,I Intensive Science and Virtual Philosophy, Continuum, london, 2002. Herr C. M., Generative Architectural Design and Complexity Theory , International Conference on Generative Art, Politecnico di Milano University, 2002. Simon, H. (1962). The Architecture of Complexity. Proceedings of the American Philosophical Society, Vol. 106(6). pp. 467 – 482. Additional: Batty, M., Longley P. (1994). Fractal Cities – A Geometry of Form and Function. London: Academic Press. Menges, A. "Instrumental geometry." In: Corser, R. (ed.) Fabricating Architecture: Selected Readings in Digital Design and Manufacturing (NY: Princeton Architectural Press, 2010): pp.29-3041. Mitchell, M. (2009). Complexity, a guided tour. Oxford: Oxford University Press Morin, E. (1992). From the concept of system to the paradigm of complexity. Journal of Social and Evolutionary Systems, 15(4). 371 – 385.

Code: 01.03.55	**Title of the subject: KONCEPTUAL OPTIMIZATION OF CONTEMPORARY HOUSING**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODUL		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field/Department of Architectural Design and Department of Structural Systems**
Prerequisites:	-
Aim (aims) of the subject:	Theoretical and practical acquaintance with the problem of developing strategies for programming, designing, building, reconstructing, financing and maintaining economically-accessible residential architecture, intended for a wide range of different social strata. The module aims to combine the design and technical aspect throughout a teaching process, with the aim of creating a structurally optimized, socially-responsive and context- conscious architecture.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The subject covers all standard types of housing (individually housing, transitional types of housing, multi-storey housing), all types of temporary housing, programmed mixed objects (50% housing), experimental types of housing. In the framework of the chosen design typology and task, students can deal with topics such as: incremental planning and design, participatory design, projecting standardization, social optimization strategies, economic optimization strategies, technical optimization strategies, use of prefabrication in construction, structural analysis with model research and similar.
Learning outcomes:	Knowledge: Students acquire theoretical knowledge regarding design and technical principles of optimization of residential buildings, as well as other related areas. Skills: Students adopt spatial and technical design, planning and control skills, as well as presentation and communication skills. Competences: Mastering the methodologies for collecting input data and their analysis, defining the project problem, defining the strategies of the design approach, spatial programming and reprogramming, designing and structurally developing a residential buildings.
Teaching methods:	Lectures, seminar work and presentation of work with active participation and discussion.
Assessment methods including grading structure [107]:	Evaluation of the final work-project in the module and engagement of the candidates.
Bibliography[108]:	Obligatory:

[107] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[108] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as**

	Adaptable Architecture (IL 14), Experiments, Institut fur Leichte Flachentragwerke, Stuttgart, (1975). Bajlon, M. (1986). Upotrebna vrijednost stana. Belgrade: Arhitektonski fakultet. Conceptual Design of Structures. (Volume I – Methodology; Volume II-Case Studies). Stuttgart: E.Kurz and Co.,1996. Hybride Tragwerke (Die logische Erfassung entwurfsrelevanter Faktoren: Geometrie-Funktion-Last-Auflager-Werkstoff-Form). Additional: Kara-Pešić I., Petovar, K. (1985). Neposredna okolina stambenih zgrada. Belgrade: Centar za stanovanje IMS. Klein, R. (1978). Sudjelovanje korisnika u oblikovanju stana. Subotica: Građevinski fakultet. Knežević, G. (1986). Višestambene zgrade. Zagreb: Liber. Knežević, G. (1994). Fleksibilnost i participacija u stanogradnji. Zagreb: Tehnička knjiga. Knežević, G., Kordiš, I. (1987). Stambene i javne zgrade. Zagreb: Tehnička knjiga. Mandić, R. (2000). Stanovanje u tranziciji, knjiga II – postdiplomski studij. Sarajevo: Arhitektonski fakultet. Norber-Schulz, C. (1990). Stanovanje. Stanište, urbani prostor, kuća (M. J. Maksimović, Transl.). Belgrade: Građevinska knjiga. Rudlin, D., Falk, N. (1999). Building the 21st Century Home – the /Sustainble Urban Neighbourhood/. Oxford: Architectural Press. Schneider, F. (1997). Floor Plan Atlas Housing. Basel: Birkhauser-Verlag. Ofner, R.: Leichtbau und Glasbau, TU Graz, IBX Fachbereich Ingenieurbaukunst, Graz, 2007 Hart, Henn, Sontag Form-Force-Mass (IL 25), Institut fur Leichte Flachentragwerke, Stuttgart, (1990).

well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.

Code: 01.03.56	Title of the subject: CONTEXTUAL APPROACH IN INTERIOR DESIGN		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 10**
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field/Department of architectural design / consultations (2 hours) with teachers specialized in relevant fields associated with the project theme**
Prerequisites:	In accordance with the guidelines and results of the official elective courses selection poll.
Aim (aims) of the subject:	Introduction of the methodological and creative and potential of the contextual approach in interior design, focusing on analysis and valorization of the physical and socio-cultural context.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Adaptive reuse / conversion of existing architectural buildings and redesign of the interiors of public functional typologies (including a mix-use projects combining several programs, such as culture, services, education, religious spaces etc.). Innovative design solutions focusing on the interior - exterior spatial correlation, as well as on the correlation of between the old and new interior components and elements. Merging the elements, stimuli and atmosphere from the surrounding in the interior design concepts. Creative expression of pluralistic identities in contemporary interiors (cultural, personal, corporate identity etc.)
Learning outcomes:	Knowledge: Creating an analytical approach, developing critical thinking and application of theoretical knowledge in interior design assignments. Understanding and critical assessment of the impact of the physical and sociocultural context on interior design process. Skills: Acquiring the know-how, skills and competencies for developing the conceptual and detailed interior design projects of public functional typologies, which involve remodelling of existing architectural structures. Competences:

	Students will be able to develop a studious approach and special creative sensibility when engaged in the projects of interior space interventions in close correlation with the direct and indirect contextual factors of the existing building.
Teaching methods:	Lectures, presentations, discussion and individual mentorships.
Assessment methods including grading structure [109]:	Assessment of the research and design parts of the assignment, according to the predefined methodological timeline. Final project presentation. Grade is obtained from the research project 90% and student participation 10%.
Bibliography[110]:	Obligatory and additional: 1. Brooker, Graeme; Stone, Sally: BASICS INTERIOR ARCHITECTURE, CONTEXT+ENVIRONMENT, Ava Publishing, 2008. g. 2. Grafe, Christoph (Ed), Bollerey, Bollerey, Franziska (Ed): Cafes and Bars: THE ARCHITECTURE OF PUBLIC DISPLAY (INTERIOR ARCHITECTURE), Routledge, 2007. g. 3. Malnar, Joy Monice; Vodvarka, Frank, THE INTERIOR DIMENSION, John Wiley&Sons, Inc, 1992.g. 4. Pallasma, Juhani, THE EYES OF THE SKIN, John Wiley & Sons Ltd, 2009.g. 5. Panero, Joseph; Zelnik, Julius; DeChiara, Martin, TIME-SAVER STANDARDS FOR INTERIOR DESIGN AND SPACE PLANNING, McGraw-Hill, 2001.g. 6. Schittich, Christian (ed). IN DETAIL INTERIOR SURFACES AND MATERIALS AESTHETICS TECHNOLOGY IMPLEMENTATION, 2008. 7. Schittich, Christian (ed). IN DETAIL: BUILDING IN EXISTING FABRIC: REFURBISHMENT, EXTENSIONS, NEW DESIGNS, Birkhäuser GmbH, 2003. g. 8. Vernet, David (Ed),; De Wit, Leontine (Ed): BOUTIQUES AND OTHER RETAIL SPACES: THE ARCHITECTURE OF SEDUCTION (INTERIOR ARCHITECTURE), Routledge, 2007. g. 9. Zumthor, Peter: ATMOSPHERES, Birkhäuser Architecture, 2006. g.

[109] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[110] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.30	Subject title: SUSTAINABLE URBANISM: CHALLENGES, TRANSFORMATIONS, SYMBOLS		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of credits: 10** (according to ECTS)
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	Teachers and associates engaged in the scientific field "Urbanism and Spatial planning"
Enrolment requirements:	Successful results achieved during the studies, especially in subjects from the department; inclination to research; Readiness for team work; Extracurricular activities / CV – workshops, exhibitions, participation in projects, etc.; Foreign language proficiency; Eloquence, communicative skills.
Subject objective(s):	Acquiring knowledge and skills for scientific-research work, focusing on the constructed space, in the sense of finding different levels and kinds of urban regeneration. Introduction of students – candidates to urbanist design methodology, for the purpose of making them sensible to the issues of the constructed space, as well as needs and controls of its mutations. Through urban conceptualisation processes, students will acquire knowledge on defining: programme determinants, contextual conditioning, urban morphology, and spatial-functional structure of the selected "sample" – work, architectural and urban forms / typological determinants in the context of the "city architecture", architectural-urban expressiveness/spatial symbolism, etc.
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*	The Urban Module programme foresees a wide scope of topics in the field of urbanist planning and design that can be developed towards a Theoretical-practical (1) and Research-scientific (2) framework.
Learning outcomes:	Knowledge: Candidates are expected to select, on the basis of a wide spatial and thematic framework, the following RESEARCH ASPECTS (1); to set a PROGRAMME STRUCTURE (2); to clearly and precisely define THE PROJECT ASSIGNMENT – THESIS (3), and, after the Confirmation – to DEFEND THE THESIS and start working on the APPLICATIVE PART – conceptualisation (4th semester of the 2nd study cycle). The thesis should primarily contain: foundation in the contemporary tendencies in Urbanism and Architecture, as well as a critical discourse towards the practice and experiences from the past. Hence, by developing the final diploma thesis – master's thesis, a student is enabled for: A desirable communication with different audience members in oral, written and graphical form – Ability to initiate a dialogue; Monitoring and implementation of contemporary urban theories, principles and practices concerning sustainability, social inclusion, cultural continuity and spatial cohesion; A high level of individuality in work; Understanding the research and synthesising methods and drawing conclusions relevant for outlining the activity list.

	Skills: work on program conceptualization at all stages of preparatin of spatial planning documentation. Ability to make independent decisions. Competencies: Preparation of textual and graphic elements of technical documentation.
Teaching methods:	Lectures and discussion, self-teaching, seminar assignment, workshop, field work.
Knowledge assessment methods with grading structure[111]:	(1) Development of a theoretical spatial programme, project assignment for the selected site and topic, in accordance with the general concept of the Module at Sarajevo Faculty of Architecture. (2) Scientific-research work. Supervision of the work / Mentorship is aimed to: Check sources, basics and concepts. Mild directing/corrections of research method, conclusions and creation of the Project assignment.
Literature[112]:	Depending on the topic selected on the module, the professor – Mentor will recommend literature. Additionally, students are expected to build capacities for individual research of sources.

[111] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[112] The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

Code: 01.03.36	Title of the subject: COMMERCIAL BUILDINGS		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: Elective Module		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs, Department of architectural design**
Prerequisites:	none
Aim (aims) of the subject:	To enable every candidate to choose a project or a theoretical assignment in the field contained by the Commercial Buildings cabinet. Those are mainly objects that deal with issues of public garages for passenger vehicles, for all kinds of industrial objects, all kinds of trading objects, like department stores, shopping centres, building materials and equipment stores (the "bau-centres"), traffic objects such as airports, marinas, train stations, bus stations, bus, railway and other traffic terminals, interchange modules, objects intended for fairs, car service centres, car saloons, hybrid objects, etc. Every candidate proposes a topic to be approved by the mentor. The mentor proposes other members of teaching staff who can assist the candidate on the work on the selected topic. Theoretical and practical introduction to the students of the complex theme of Commercial Buildings, which encompasses analytical and comprehensive research of selected topic. This conceptual research, which includes historical method with comparative, inspirational and referential examples, becomes organic part of the final project in forthcoming semester.
Content:	Subject is conceived as a synthesis of research and practical work in an architectural design studio with discussions and final presentation of conceptual project. Within scientific research, students are introduced to the methodology of this kind of work, which is concretely related to the selected theme from the field of Commercial buildings. Applicative part purports research related to the concrete location and problem, and making of programmatic and conceptual architectural designs, with all elements needed for adequate presentation of the project.

Learning outcomes:	**Knowledge:** Mastering methodology and individual production of programmatic and analytical part of selected architectural project, with scientific research and applicative part (conceptual design) or production of selected programmatic and analytical theoretical work, in collaboration with the mentor and advisors according to fields relevant for the domain of work and research, and upgrading selected theme into final diploma thesis. **Skills:** Mastering skills of practical application of specific knowledge of designing commercial buildings. **Competences:** Designing commercial buildings in practice
Teaching methods:	Lectures, multimedia presentations, practical exercise associated with selected theme, visit and analysis of potential and proposed locations, relevant institutions etc.
Assessment methods including grading structure [113]:	Grade is obtained from the research project 90% and student participation 10%. Positive grade at the end of the semester is the prerequisite for upgrading selective module into final project in 4th semester.
Bibliography[114]:	Obligatory: All the literature from the Syllabus related to subjects in the Commercial Buildings cabinet, "Design 8" – Building public parking garages, "Design 9" - Industrial buildings, "Design 10" – Agricultural objects, Commercial buildings, Traffic objects, Fairgrounds and exhibitions, Persons with physical impairment and architectural barriers, as well as other literature relevant for a specific topic and recommended by the mentor.

[113] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[114] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.05.25	Title of the subject: DESIGN BY THE PRINCIPLES OF BIOKLIMATIC ARCHITECTURE		
Cycle: 2nd	Year: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	
Prerequisites:	
Aim (aims) of the subject:	Introduce architecture (urban ensemble, architectural object) as an energy system and understand the significance of the relationship between the external influences and input solutions of architectural tasks. Understanding the syntagm's "energy efficiency in architecture".
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Development of the idea of bioclimatic architecture. Truths and Misconceptions (energy, resources). Self-sustainability in architecture. Differences and similarities between the terms "self-sustainable" and "bio-climatic architecture". Context.
Learning outcomes:	The student should be able to see architecture as the unity of its artistic and exemplary-empirical components. The conceptual solution that is publicly defended at the Commission's Chair. Introduction to graduate thesis.
Teaching methods:	Lectures pointing to the dependence of this problematization and the overall environment through templates and field insights.
Assessment methods including grading structure [115]:	Monitoring of teaching 5% Individual (individual) action 95%
Bibliography[116]:	Required: Hadrovic, dr. Ahmet: Bioclimatic Architecture, Searching for a Path to Heaven, Booksurge, LLC, North Charleston, SC, USA, 2008.

[115] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[116] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Hadrovic, dr Ahmet: New Approach to Conceptualization and Materialization of Architecturally Defined Space, Faculty of Architecture of the University of Sarajevo, 2016. Recommended: Balcomb, J.Dluglas: Passive Solar Buildings, The MITPres, Cambridge, Massachusetts, London, 1992. Cook, Jeffrey: Passive Cooling, The MITPres, Cambridge, Massachusetts, London, 1996. Hadrović, dr Ahmet: *Arhitektonska fizika*, Drugo izdanje, Acta Architectonica et Urbanistica, Arhitektonski fakultet u Sarajevu, 2010. Hadrovic, dr Ahmet: *Hadre, The Evolution of Bioclimatic Architecture,* Booksurge, LLC, North Charleston, SC, USA, 2009. Hadrović, dr Ahmet: *Studije o arhitekturi i ogled o arhitekti*, (i verzija na engleskom jeziku: *Research study on Architecture and Overview of the Architect's Experience*), Sarajevo, Acta Architectonica et Urbanistica, Arhitektonski fakultet u Sarajevu, 2010. Ronald W. Larson, Ronal E.West: Implementation of Solar Thermal Tehnology, The MITPress, Cambridge, Massachusetts, London, 1996. Rudolfski, Bernard: Arhitektura, Građevinska knjiga, Beograd, 1976. Časopis: Texhniques & Architecture (posebni brojevi 291/73, 315/77) Časopis: Domus, The Japan Architecture, DBZ

Code: 01.06.20	**Title of the subject: RECONSTRUCTION OF MASONRY STRUCTURES**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 10**
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field/ Department for construction systems.
Prerequisites:	None.
Aim (aims) of the subject:	To master methodology and skills of intervening on masonry structures.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Reconstruction of masonry structures methodology and classification, causes, consequences and detection of damage and diagnostics; Types and characteristics of materials used in load bearing elements of walled objects; Methods of examining materials and constructions – destructive and non-destructive methods; Disposition and outline of an object – Recommendations and regulation requirements; Types of constructions, materials, construction assemblies and elements in the late 19th and early 20th century; Causes of decay, floor construction and shallow wall arch ways of intervention and methods of protection – the Prussian arch; Estimated bill of quantities, preparatory activities, technological processes, construction site organisation and technical protection measures for object reconstruction; Interventions in the reconstruction of masonry objects with traditional and contemporary materials; Possibilities of developing the existing outlines during object reconstruction; Application of architectural physics in object reconstruction; Reconstructions of installations; Fire protection of masonry structures; Masonry object reconstruction examples from practice.
Learning outcomes:	Knowledge: Through the teaching process, students will: adopt principles of intervention and their application in individual projects – adopt ways of expressing themselves in reconstruction of the masonry structure; develop interest and responsibility towards the profession; get acquainted with the masonry building as a whole, including all its important parts; scientifically approach the solving of

	the building construction; create a database for individual work at the development of blueprints; Skills: develop independence in solving problems; adopt principles of solving walled architectural constructions and acquire knowledge on their application at different concrete assignments. Competences: intervention and their application in individual projects of the reconstruction of the masonry structure.
Teaching methods:	Lectures: oral and presentational; conversational method, practical presentations, deliberations. Practical classes: presentations and consultations.
Assessment methods including grading structure [117]:	Students are graded through a seminar assignment or conceptual design on a given topic. The exam is prepared through content presented at lectures and practical classes, as well as through literature recommended by professors and associates at the beginning of the course.
Bibliography[118]:	Obligatory: Čaušević, A: (2004). *Konstruktivni aspekti sanacije i rekonstrukcije zidanih objekata visokogradnje*. (Master's thesis defended at the Faculty of Architecture, University of Sarajevo). Čaušević, A., Rustempašić, N. (2014). *Rekonstrukcija zidanih objekata visokogradnje*. Sarajevo: Arhitektonski fakultet. Hrasnica, M. (2005). *Seizmička analiza zgrada*. Sarajevo: Univerzitet u Sarajevu. Hrnjić, H., Čaušević, A., & Skoko, M. (2012). *Otpornost materijala.* Sarajevo: Arhitektonski fakultet. Radić, J. et al. (2007). *Zidane konstrukcije*. Priručnik. Zagreb: Hrvatska sveučilišna naklada. Sorić, Z. (1999*). Zidane konstrukcije* I. Zagreb: Hrvatski savez građevinskih inženjera. Additional: Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate

[117] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[118] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.34	Title of the subject: RECULTIVATION AND RECONSTRUCTION OF DEGRADED URBAN AREAS		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [Do not enter names in this section. Leave the formulation as indicated in this section]
Prerequisites:	-
Aim (aims) of the subject:	Mastering methodology of urban design in complex relationships of degraded natural and artificial surrounding, depending on the degree of degradation. Consolidation of the terrain, as well as design of urban greenery, vacation and recreation and other relevant activities.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Theoretical basis for urban and natural landscape (image of the city) analysis, Natural landscape elements; Created landscape elements; Perceptive-psychological aspects of experiencing a landscape; Sociological aspects; Ecological aspects of landscape design; Aesthetical aspects (composition) of landscape design; Methodology of landscape design; Researching planning documents; Concept formation; A detailed design and description of the solution; Final project presentation and discussion.
Learning outcomes:	Knowledge: development of analytical and critical observation of overall relationship in urban and natural environment. Development of the feeling of responsibility with future colleagues with respect to the decoration of surfaces and areas neglected after having been used for other purposes, as well as the need of their functional conversion. Understanding space as a scenography framework for continuation of complex processes of interaction between citizens and their surroundings. Skills: Mastering the methodology of recycling degraded urban spaces after inadequate exploitation or after the end of original use. Redesign of such spatial spans. Competences: Participation in the planning and decision-making processes on the use, reallocation and restoration of the degraded areas.
Teaching methods:	Theoretical part (lectures and individual and group consultations and practical part (practical classes – development of the concept and conceptual urban design project at a selected location).

Assessment methods including grading structure [119]:	Participation is evaluated in all segments, with respect of the prescribed deadlines for certain phases realised within this module during the semester.
Bibliography[120]:	Obligatory: Booth, N. K. (1983). *Basic Elements of Landscape Architectural Design*. New York, Amsterdam, Oxford: Elsevier. Halprin, L. (1971). *Gradovi* (M. J. Maksimović, S. Maksimović, Transl.). Belgrade: Gradjevinska knjiga. Krier, R. (1975). *Urban space*. London: Academy Editions. Lynch, K. (1974). *Slika jednog grada* (M. J. Maksimović, Transl.). Belgrade: Građevinska knjiga. McHarg, I. (1969). *Design with Nature.* Cardell City, NY: Narum! His/ory Press. Norberg-Schulz, C. (1975). *Egzistencija, prostor i arhitektura* (M. J. Maksimović, Transl.). Belgrade: Građevinska knjiga. Norberg-Schulz, C. (1979). *Genius loci.* London: Academy Editions. Sitte, C. (1967). *Umjetničko oblikovanje gradova* (Đ. Tabaković, Transl.). Belgrade: Građevinska knjiga. Vresk, M. (1980). *Osnove urbane geografije*. Zagreb: Školska knjiga. Waymark, J.(2003). Modern *Garden Design*. London: Thames & Hudson. Žuljić, V. J. (1984.-2000). *Separati.* Sarajevo: Arhitektonski fakultet. Additional: Mitchell,W.J.T.(1994) Landscape and Power, the University of Chicago Press.

[119] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[120] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.39	**Title of subject: HOUSING OBJECTS WITHIN ARCHITECTURALLY - SPECIFIC URBAN ENVIRONMENT**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** **Lectures 60** **Exercises 30**	

Teaching staff	
Prerequisites:	-
Aim (aims) of the subject:	Educating students for successful solving of complex project assignments – designing apartment buildings within architecturally-specific urban wholes, through research, analysis and valorisation process of the existing architectural structures (in a functional and aesthetical sense), which will result in a contemporary architectural structure contributing the adjustment of spatial relations. Directing students towards theoretical principles and scientific understanding of the issues.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The subject is envisioned as a synthesis of research and practical work. As part of the research, students are introduced with methodology of such activities, examining the discourse of architecture from the very definition to more narrow issues – interpolations of new architectural structures in the existing surrounding. Practical part of the work entails a detailed research of the existing state in the sense of defining the existing spatial and cultural identity (accompanied by graphical presentations), all of which should result in the analytical part of the work. On the basis of that section of the work, students come closer to the design process and the conceptual design development.
Learning outcomes:	Skills: Comprehending the scientific-research work methodology and its correct application on a concrete case, through a synthesis of theoretical and graphical part of the work (conceptual design). Comprehending the complex design issues through respect for form-function relationships, existing-new, time-place. Competences: Students are expected to develop the ability to apply fundamental research and design methodology and knowledge into the designing process. Students are, also, expected to develop the ability to design contemporary housing, through a process of critical reflection, while respecting the complex architectural and urban requirements of the environment.

Teaching methods:	Classes are organised through lectures and consultations (group or individual), which entail acquiring knowledge on theoretical and practical approach to work.
Assessment methods including grading structure [121]:	Students are evaluated through continual work on contributions, with fulfilment of the prescribed deadlines for certain phases of the work, as well as presentation of the final, conceptual desig
Bibliography[122]:	Obligatory: Brolin, C. B., Arhitektura u kontekstu (Naslov originala: Architecture in Context. Prevod: D. Jauković). Iro Građevinska knjiga, Beograd, 1985. Frampton, K., Moderna arhitektura - kritička povijest (Naslov originala: Modern Architecture: Critical History. Prevod: T. Tot). Globus zakladni zavod, Zagreb, 1992 Ivančević, R., "Staro" i "novo" u arhitekturi i urbanizmu. Život umjetnosti br. 5, Zagreb, maj 1967. Ivančević, R., Interpolacija: Međuvrijednost među vrojednostima ili krivotvorina. Arhitektura br. 184-185, Zagreb, maj 1983. Ivančević, R., Radijus ozračja spomenika, znanstveni rad, 1996. Jencks, C., Architecture 2000 and Beyond. Wiley- Academy, West Sussex, 2000. Radović, R., Savremena arhitektura – između stalnosti i promena ideja i oblika. "Stylos", Novi Sad, 1998. Ugljen-Ademović, N., Vrednovanje starog i novog - sistematično proučavanje starog da bi se moglo izraditi kreativno novo -magistarski rad. Ljubljana, 2002. Ugljen-Ademović, N., Dvojnost pristupa problemu integriranja novog u postojeće u arhitektonskom oblikovanju - doktorski rad, 2007. Ugljen-Ademović, N., Kritika - stimulans arhitektonskoj ideji, Dobra knjiga d.o.o, Sarajevo, 2012. Zelenika, R., Metodologija i tehnologija izrade znanstvenog i stručnog djela. Ekonomski fakultet u Rijeci, Rijeka, 1998. Additional: Colquhoun, A., Collected Essays in Architectural Criticism. Black Dog Publishing, London, UK , 2009. Forty, A., Words and Buildings, A Vocabulary of Modern Architecture. Thames & Hudson, New York, 2000. Ghirardo, D., Architecture After Modernism. Thames and Hudson Ltd, 1996. Giedion, S., Prostor, vrijeme, arhitektura (Naslov originala: Raum, Zeit, Architektur). Građevinska knjiga, Beograd, 1969. Silobrčić, V., Kako sastaviti, objaviti i ocijeniti znanstveno djelo. Medicinska naklada, Zagreb, 1998. stručni arhitektonski časopisi.

[121] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[122] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.16	Title of the subject: URBAN TRANSFORMATIONS		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 (60 + 30) Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Enabling students for development of urban design projects of transforming urban ensembles, through examination of theoretical findings on valorisation and global essence of (re)shaping of the immediate human enviroment and, at the same time, through a comprehensive analysis and valorisation of a concrete urban ensemble; An insight into the methodological procedure of urban (re)design and development of scientific-research work.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	By an insight into methodology of scientific-research work and urban design, students acquire knowledge on urban transformations' programme determinants, thier contextual determinations, structure and morphology of a (part) of the urban space, architecture of the city and urban-architectural significance. By a synthesis of the assembled data and artistic vision displayed by the spatial design of the se assignment, it is important to notice values and conflicts of the concrete urban ensemble, and then to develop them programme-wise and harmonise them in term of urban development.
Learning outcomes:	Knowledge: Conceptual urban design project Skills: A synthetical elaboration of the applied scientific-research model (theoretica part) and solving of the detected conflict situations in the relationship between the man and a physical structure (graphical part); Competences: Development of practical instructions for iomplementation of the conceptual urban design project, with instructions related to the control of the project.
Teaching methods:	Theoretical section (lectures and group consultations) and practical section (practical classes – development of conceptual transformation project at a selected complex).

Assessment methods including grading structure [123]:	Participation in all forms of work is evaluated, with fulfilment of the prescribed deadlines for certain phases of the work realised during the semester within this module.
Bibliography[124]:	Obligatory: Bacon, N. E, Design of Cities, M.I.T. Press, Chicago, 1978 Brolin, C. B, Arhitektura u kontekstu, Građevinska knjiga, Beograd, 1988 Castex, J, Depaule, J. C. i Panerai, P, Urbane forme, Građevinska knjiga, Beograd, 2002 Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Jencks, C, Moderni pokreti u arhitekturi, Građevinska knjiga, Beograd, 1988 Elin, N, Postmoderni urbanizam, Orion art, Beograd, 2002 Kostof, S, A History of Architecture. Settings and Rituals, Oxford University Press, Inc, Oxford, New York, 1995 Krier, R, Gradski prostor u teoriji i praksi, Građevinska knjiga, Beograd, 1999 Low, M. S, Promišljanje grada, Naklada Jesenski i Turk, Zagreb, 2006 Mumford, L, Kultura gradova, Mediterran Publishing, Novi Sad, 2010 Norber-Schulz, C, Intencije u arhitekturi, Naklada Jesenski i Turk, Zagreb, 2009 Norber-Schulz, C, Stanovanje. Stanište, urbani prostor, kuća, Građevinska knjiga, Beograd, 1990 Rossi, A, Arhitektura grada, DIP "Građevinska knjiga" i PP "Premis", Beograd, 2002 Woods, S, The Man in the Street, Penguin Books, London, 1975 Additional: Cook, P, The City, Seen as a Garden of Ideas, Peter Cook and The Monacelli Press, Inc., New York, 2003 Fyfe, R. N, Prizori ulice, Clio, Beograd, 2002 Kolešnik, Lj, Umjetničko djelo kao društvena činjenica, Institut za povijest umjetnosti, Zagreb, 2005

[123] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[124] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.26	Title of the subject: URBAN PLANNING AND DESIGN		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 10
Status: ELECTIVE MODULE		Total number of hours: 90 Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field of urbanism and spatial planning
Prerequisites:	In accordance with the Faculty of Architecture rules.
Aim (aims) of the subject:	Acquiring knowledge and skills of the (1) scientific-research work, as well as individual work of the highest degree in the (2) urban design or (3) development programming for specific urban areas, as well as transmitting the project base into a development concept; building the ethics in the field of scientific work, urban design and planning.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The program of the module is tailored for each student eg. design-research or science-research orientated, and in the field of housing, macrourban entities and urban theory.
Learning outcomes:	Knowledge: research methodology and methods, and preparation of a project proposal; the goals and development program conceptualization for the specific city areas; understanding of planning documents hierarchical order. Skills: Understanding the relationship between people and objects and between objects and their environment and the need to connect objects and spaces between them with the human needs and measure; Responsibility for one's own work and ability of self-critical reflexion; Ability to work with a high degree of autonomy; Ability to communicate in writing, orally and graphically; Ability to evaluate evidence and extraction of suitable conclusions. Competences: the work on a concept and implementation of a development program documents; the work on urban design project; the work in a scientific-research field.
Teaching methods:	Lectures and discussion, self-teaching, practical classes.

Assessment methods including grading structure [125]:	Textual, graphical and oral presentation of a research, and critical analysis of the project/programme/research concept.
Bibliography[126]:	Obligatory: literature selection is tailored for each student, depending on the selected final work area. Additional:

[125] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[126] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.04.41	Title of the subject: URBAN AND SPATIAL PLANNING		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 10
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs**
Prerequisites:	In accordance with the Faculty of Architecture rules
Aim (aims) of the subject:	Acquiring knowledge and skills of scientific research, as well as individual work of the highest level in the domain of urban planning and programming planning, understanding and application of the spatial-planning basis into the concept of development, and adaptation of project solutions to the spatial concept.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Themes in the module are design-research and science-research orientated, in the field of housing, macro-urban units, urban planning and urban theory. Preparation of (1) theoretical-programmatic urban-project task and (2) concept for the selected area-location, or preparation of proposals for scientific-research work.
Learning outcomes:	Knowledge: Understanding the relationship between space / economics / ecology / technology and the importance of correctly planning and using these resources and tools in terms of the adequate functioning of the city in relation to man, ie accepting social infrastructure as a tool for achieving a balanced development of the city. Urbanistic and architectural solutions for urban regeneration in the process of adapting to the changes of the XXI century, in a range from social, economic, climate and ecological, to technological ones. Skills: During the module's work, the student uses scientific-research methods, analyzes and develops a concept with details tailored to the narrower research topic

	Competencies: The student is competent to use basic scientific-research methods and to adopt integrated knowledge in different areas from a functional, constructive and design aspect and applies it in the conceptual analytical approach of a selected thematic area.
Teaching methods:	Lectures and dissusions, organized as a combination of informative and interactive teaching.
Assessment methods including grading structure [127]:	The grade from the subject is derived from research work / project -90% and student activity-10%.
Bibliography[128]:	Recommended reading is adjusted to the topic, for every student individually.

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[128] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.06.19	**Title of the subject: HIGH-RISE BUILDINGS IN ARCHITECTURE**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 10**
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field/ Department of architectural construction and building technology /Department for construction systems.
Prerequisites:	None.
Aim (aims) of the subject:	Understanding the issues related to the construction of tall objects in architecture, paying attention to critical influences caused by horizontal forces of earthquakes and wind. Getting to know High rise buildings in architecture through all phases of design, planning and construction.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	A historical overview, High rise buildings in architecture development; chronology of structural growth; Influence of structural load to the high rise objects; principles of seismology; seismic loading; structural efficiency measures; structural shapes of High rise buildings; structural concepts; structural forms; High rise buildings in architecture design; concepts and typology; materialisation; tall objects' construction technologies; inventive technologies of formwork and concrete laying – creeping formwork; examples of the constructed tall objects; comfortability and safety of use of the objects from the aspect of built-in materials; Principles of construction site organisation for tall objects; facades in tall objects; facade materialisation; systems of tall objects' installation systems; tall objects' energy efficiency; reinforced concrete advantages; fire protection in tall objects; foundation work; foundation work – the ground-construction interaction.
Learning outcomes:	Knowledge: Through the teaching process and work on the subject, students will: adopt designing and planning principles for tall objects, as well as their application in individual projects – adopt modes of expression in civil engineering; develop interest and responsibility towards the profession; scientifically approach the solving of tall objects in architecture; create a database for individual work in development of blueprints;

	Skills: adopt principles of solving tall objects as architectural constructions and gain an insight into their complexity at different concrete assignments and develop independence in the assignment-solving process; Competences: get to know the tall object as a whole and all its important parts;
Teaching methods:	Lectures: oral and presentational; conversational method, practical presentations, deliberations. Practical classes: presentations and consultations.
Assessment methods including grading structure [129]:	Students are graded through a seminar assignment at a given topic. The preparation is conducted through lectures and practical classes, as well as on the basis of a literature list recommended by professors and assistants at the beginning of the teaching process.
Bibliography[130]:	Obligatory: Coull, A., Smith, Stafford, B. (Eds). (1997). *Tall Buildings.* London: Pergamon Press. Hrnjić, H., Čaušević, A., & Skoko, M. (2012). *Otpornost materijala.* Sarajevo: Arhitektonski fakultet. Lyn, T. Y., Stotesbury, S. (1994). *Structural Concepts and Systems for Architects and Engineers.* Hoboken, NJ: John Wiley. Lynn, S. B. (1996). *Advances in Tall Buildings.* Delhi: CBS Publishers and Distributors, Delhi. Taranath. B. S. (1998). *Structural Analysis and Design of Tall Buildings.* New York: Mc Graw Hill. Additional: Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

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[130] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.60	**Title of the subject: HOUSING REGENERATION OF THE XXth CENTURY RESIDENTAL SETTLEMENTS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 10**
Status: ELECTIVE MODULE		**Total number of hours: 90 (60 + 30)** Lectures 60 Exercises 30	

Teaching staff	Teachers and associates elected in the field/Department of architectural design / consultations (2 hours) with teachers specialized in relevant fields associated with the project theme from the AF UNSA
Prerequisites:	In accordance with the guidelines and results of the official elective courses selection poll
Aim (aims) of the subject:	Understanding and mastering the problem of housing, through dialectical relation: time-space, individually-collectively, existing - newly built. The design task is based on the research in archives and on-site, analysis and valorization of the existing state/level of housing within residential areas, so that the architectural conceptual solution can be developed (several contemporary architectural structures that could be able to improve the quality of housing through generating its primary and service functions). New modern architectural structures question and develop the following design approaches: architectural and urban recycling, architectural regeneration, transformation, modification. The aim of this assignment is to point out the existing values of the researched spatial concept of housing and to reduce its deficiencies by establishing relationships with the physical micro-contest and contemporary/current cultural and social movements.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The essential character of the subject is intersdiciplinarity, as it consists of three components: research-theoretical, participative-work with the local community and practical-designing. Through the first part of the work, students are introduced to the historical development of the 20th century housing and contemporary concepts of living from the aspect of modernity and globality. The participative aspect includes: on-site research, collaboration with the local community as well as cultural anthropologists, and

	getting a knowledge of the modality of the phenomenon of "homeland identity" within the 20th century residential settlements. The final part of the work is the synthesis of the previous two presented parts, with the conceptual architectural project.
Learning outcomes:	Knowledge: Developing custom tactical approach to rehabilitation of the existing housing concepts within contemporary urban and social dynamics (globalization and transitional character). This approach will enable students to acquire and develop knowledge and skills in the methodology of scientific research, the complexity of solving design problems, (self) critical thinking in the field of culture and residential architecture, and generally a creative, imaginative and innovative approach to addressing architectural issues. Skills: The final product is a conceptual architectural project based on the synthesis of theory (establishment and evaluation of a particular model of research) and the graphic/design part of the work (spatially articulated models of housing- programme, function and shape/form). Competences: Exploring and understanding the aspects of residential rehabilitation entirely through the methods of verifying the vitality of the very concept of housing - designing interventions that go beyond the physical structure of the apartment / dwellings by questioning the relationship between man and the community.
Teaching methods:	Teaching is conducted through lectures, discussions, on-site work, presentations and consultations (group or individual), which include the acquisition of knowledge of theoretical-research approach to work, the design of housing within the current context.
Assessment methods including grading structure [131]:	Examination will be made on the basis of phases of work evaluation (number is determined by the complexity of the task) - 30%, and the design project- 70% of the final score. Positively evaluated work is a precondition for continuation of the project in the fourth semester as a final-graduate thesis.
Bibliography[132]:	Obligatory:

[131] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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	Aubert, D., Čavar, L., Chandani, N. (ur.): Thanks for the View Mr. Mies: Lafayette Park, Detroit, Metropolis, NY, 2012. Bajlon, M. (1986). Upotrebna vrijednost stana. Belgrade: Arhitektonski fakultet Kulić, V., Mrduljaš, M., Thaler, W. (ur.): Modernism In-Between. Jovis, 2012. French, H.: New Urban Housing, Laurence King Publishing, London, 2009. Gulin-Zrnić, V.: Kvartovska spika, Jesenski i Turk, Zagreb, 2009. Phillips, A., Erdemci, F. (ur.): Social Housing- Housing the Social: Art, Property and Spatial Justice, Sternberg Press, 2012. Turkušić Jurić, E.: Arhitektura i kulturološki identitet od moderne do danas (phd), AFS, Sarajevo, 2011. Additional: Zelenika, R., Metodologija i tehnologija izrade znanstvenog i stručnog djela. Ekonomski fakultet u Rijeci, Rijeka, 1998.

Code: 01.03.35	Title of the subject: VISUALIZATION OF ARCHITECTURE-FROM IDEA TO REALIZATION - MODULE		
Cycle: 2	**Year: 2**	**Semester: 3**	**Number of ECTS credits: 10**
Status: Elective		**Total number of hours: 90 (60+30)** Lectures 60 Exercises 30	
Teaching staff	Teachers and associates elected in the field to which the subject belongs - Spatial and graphic representation		
Prerequisites:	-		
Aim (aims) of the subject:	The aim of this specific module is to visualize projects, ideas, thoughts, ideas until realization - final technical documentation. The totality of knowledge and skills tied into a single idea - an architectural work.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Designing residential, sacred and public buildings, as well as memorial, monumental and landscape architecture from the initial idea in relation to thought, time and place to the project for execution.		
Learning outcomes:	Knowledge: Developing thoughts and ways of thinking that involve the merging of "two worlds": artistic and technical, sacred and profane, internal and external. Skills: Acquiring knowledge and skills for presentation - visualization of a comprehensive architectural work, from conceptual design to design, from idea-thought to building physics. Competences: The student will develop a special approach and feeling when designing projects, from concept to implementation, and develop a way of thinking and reasoning in relation to the type of object she or he is building.		
Teaching methods:	An individualized approach to integrated lectures and exercises.		
Assessment methods including grading	Grade is obtained from the research project 90% and student participation 10%.		

structure [133]:	
Bibliography[134]:	Obligatory and additional: Teacher - The mentor will give instructions on the choice of literature depending on the chosen topic of the student, and the student is expected to independently research the sources of literature.

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Code: 01.03.63	**Title of the subject: SPATIAL CONCEPTS IN ARCHITECTURE AND ART IN CONTEMPORARY CULTURAL CONTEXT**		
Cycle: 2	**Year of the study: 2**	**Semester: 3**	**Number of ECTS credits:** 10
Status: elective module		**Total number of hours: 90** Lectures: 60 Exercises: 30	

Teaching staff	Teachers and associates elected in the field- Department for Architectural Design/ The consultations can be attended by AF UNSA home teachers , visiting lecturers and teachers
Prerequisites:	Preference is given to students who have taken the elective course "Spatial Concepts in Architecture and Art"
Aim (aims) of the subject:	Confronting students with the creative potential of the contemporary cultural context for a design approach to architectural and artistic spatial concepts.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Students choose a challenging cultural context and perform urban, artistic, economic, sociological analyzes to prepare for creative interventions in the form of spatial concepts.
Learning outcomes:	Knowledge: Through chosen topic within the elective module - the student acquires knowledge of critical analysis and evaluation of the cultural context and basic scientific and research methods of approaching a project assignment Skills: During the practical training in the module, the student independently realizes a theoretical research project which in the final phase results in a detailed project assignment for the development of a conceptual design in the chosen thematic area. Competences: The successful application of the acquired knowledge is manifested through an analytical-critical approach and a special creative sensibility towards the creation of new spatial concepts in architecture and art.
Teaching methods:	Lectures and individual tutoring in the form of discussions, corrections and consultations with other teachers as needed.
Assessment methods including	Presentation of the results of the analytical and / or design part of the assignment - defence of the final thesis.

grading structure [135]**:**	
Bibliography[136]**:**	Obligatory and additional: Arnheim, R, 1981: Umetnost i vizuelno opažanje. (Naslov originala: Art and Visual Perception. Prijevod: V. Stojić). Univerzitet umjetnosti u Beogradu; Arnheim, R, 1990: Dinamika arhitektonske forme (Naslov originala: The Dynamics of Architectural Form. Prijevod: V. Stojić). Univerzitet umjetnosti u Beogradu; Baudrillard J, Nouvel J. (2002). *Singular Objects of Architecture.* University of Minnesota Press; Bower, R.,2016. *Architecture and Space Reimagined: Learning from the Difference, Multiplicity, and Otherness of Development Practice.* s.l.:Routledge; Giebelhausen, M., 2003. *The Architecture of the Museum: Symbolic Structures, Urban Contexts.* s.l.:Manchester University Press: Ibrišimbegovic,S,2015. *Arhitektura muzeja savremene umjetnosti kao kapsula vremena.* Sarajevo : PhDissertation. Norberg – Schulz, C., 1999: Egzistencija, prostor i arhitektura (Naslov originala: Existence, Space & Architecture. Prijevod: M. Maksimović). Građevinska knjiga, Beograd: Peterlić, M., 2009: Spoznaja intuitivnoga (Rudolf Arnheim, Novi eseji o psihologiji umjetnosti). Vijenac 411, Matica hrvatska, Zagreb; Norberg-Schulz, C., 2009. *Intencije u arhitekturi.* Zagreb: Naklada Jesenski i Turk Pallasmaa, J. (1996.). The Geometry of feeling: a look at the phenomenlology of architecture. In Kate Nesbitt, *Theorizing a new agenda for Architecture* (pp. 448-453). New York: Princeton Architectural Press; Rossi, A., 1984. *The Architecture of the City.* Boston: MIT Press. Ugljen-Ademović N, 2012. *Kritika stimulans arhitektonskoj ideji.* Sarajevo: Dobra Knjiga d.o.o.

[135] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.05.47	**Title of the subject: DESIGNING LOW ENERGY ARCHITECTURE**		
Cycle: II	**Year of the study: II**	**Semester: III**	**Number of ECTS credits: 10**
Status: ELECTIVE MODUL		**Total number of hours: 90 hours per semester** Lectures 60 hours per semester Exercises 30 hours per semester	
Teaching staff	Teachers and associates selected in the field to which the subject belongs - Area for architectural constructions and construction technology. Others: as needed		
Prerequisites:	Enrollment in the third semester of the second cycle of postgraduate studies. The selection of students for the Module will be based on the achieved results within the subjects Architectural Physics 1, Bioclimatic Architecture, Architectural Structures 5 and Architectural Structures 6.		
Aim (aims) of the subject:	Introducing students to the complexity of the process of creating a low-energy architectural buildings in the real context of architectural creation; Include all phases of research, analytical, programming and design activities without diminishing the importance of ambient, functional, artistic and constructive values of architecture.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Various architectural topics, but preferably residential, educational and office buildings. Recommended will be a real project with the possibility of its potential implementation in practice. Architectural competitions can also be considered, where great emphasis will be placed on creation of the concept of a low-energy building.		
Learning outcomes:	Through systematic, scientific research and design work on a specific task, the student will acquire knowledge to independently produce a solution for transformation of an architectural building in accordance with the standards of low-energy architecture.		
Teaching methods:	Lectures and individual mentoring in the form of discussions, corrections and consultations with other teachers and external associates if needed. The project is done individually and publicly presented.		

Assessment methods including grading structure [137]:	Presentation of the results of the scientific research and design part of the task - defense of the final paper.
Bibliography[138]:	Bruck, J., (2009.), *Neue Energiekonzepte*, Beuth Verlag GmbH, Berlin, ISBN: 978-3-410- 17248-2 Danijels, K., (2009.), *Tehnologija ekološkog građenja, Osnove i mere, Primeri i ideje*, NK Jasen, Beograd, ISBN: 978-85337-66-6 Duran, S., C., (2011.), *Architecture & Energy Efficiency*, LOFT Publications, Barcelona, ISBN: 978-84-9936-206-9 Hadrović, A., (2010.), *Arhitektonska fizika - drugo izdanje*, Arhitektonski fakultet Sarajevo, Sarajevo, ISBN: 978-9958-691-20-1 Hadrović, A., (2008.), *Bioklimatska arhitektura, traženje puta za Raj*, Arhitektonski fakultet Sarajevo, Sarajevo, ISBN: 978-9958-691-05-8 Hegger, M., Fuchs, M., Stark, T., Zeumer, M., (2008.), *Energy Manual, sustainable architecture*, Institut fur internationale Architektur-Dokumentation GmbH & Co KG, 2008., Minhen, ISBN: 978-3-7643-8830-0 Henning, M., H., (2004)., *Solar-Assisted Air-Conditioning in Buildings*, Spreinger-Verlag Wien New York, Wien, ISBN: 978-3-211-73095-9 Hoghton, T., (2009.), *Net Zero Energy Design, a guide for commercial architecture*, Cambridge University Press, UK, ISBN: 978-1-118-01854-5 Kosorić, V., (2007.), *Aktivni solarni sistemi, primjena u materijalizaciji omotača energetski efiasknih zgrada*, Građevinska knjiga, Novi Sad, ISBN: 978-86-395-0534-9 Radosavljević, J., M., Pavlović, T., M., Lambić, M., R., (2004.), *Solarna energetika i* *održivi razvoj*, Građevinska knjiga, Beograd, Beograd, ISBN: 86-395-0405-9

[137] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.06.27	**Title of the subject: PREFABRICATION OF LOAD-BEARING SYSTEMS**		
Cycle: 2nd	**Year: 2nd**	**Semester: 3th**	**Number of ECTS credits: 10**
Status: Elective		**Total number of contact hours: 90** Lectures 60 Practical classes 30	
Teaching staff:	Teachers and associates elected in the field to which the subject belongs- Department for Construction Systems		
Prerequisites:	Students regularly enrolled in the second year of the Second-Cycle Degree program. The advantage is given to students who have shown an affinity for Department for Construction Systems subjects during their studies.		
Aim (aims) of the subject:	One of the aims of this subject is the theoretical and practical introduction of students to the methodology of research projects that should result in the proposals for improving the known concepts of prefabricated load-bearing systems. These improvements apply to load-bearing structures of architectural buildings with different spans and functional purposes.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	This subject covers all standard types of prefabrication and prefabricated structures with different structural systems *(skeleton frame system, structural panel system, system of spatial structure elements, combined structural system).* It introduces students to modern methods and techniques of digital fabrication by presenting the latest achievements in this area. Modern market needs for sustainable architectural structures require additional research that will modify existing and form new proposals for load-bearing elements and establish connections between them, which will directly affect the improvement and development of prefabricated structural systems. Through case studies of prefabricated structures (modular residential buildings, modular temporary buildings, prefabricated public, industrial buildings, etc.) with emphasis on load-bearing structures, students can choose individual assignments according to their affinities.		
Learning outcomes:	**Knowledge:** By successfully mastering the content of this course, students gain theoretical and practical knowledge about prefabricated load-bearing systems and their application		

	in architectural structures of various spans and functional purposes. **Skills:** Ability to independently solve the concept and details of prefabricated load-bearing structures, as well as the ability to propose new innovative solutions and improve existing prefabricated building systems regarding selected materialization (concrete, steel, wood, or a combination of materials) for various architectural structures. **Competences:** After completing the requirements of the course, which include mastering the material presented in lectures and the completed research project, the student has acquired knowledge about the methodology of research projects and successfully managed the analysis and synthesis of data collection. A student has focused on prefabricated structures, familiar with all the advantages and disadvantages of their application. They can solve various prefabricated structural systems using the latest digital tools and techniques, work on their improvement in proposals for new types of structures, modify existing ones, and independently solve and propose new details of connections between connections elements.
Teaching methods:	Lectures include presentation of theoretical and practical examples related to the field of prefabricated structures using the methods of analysis, synthesis, and comparison, with interactive communication between students and Professor. In addition, under the supervision of teaching staff, the students work on preparing individual research papers, which they are obliged to present several times during the semester. Consultations with students related to preparing research papers are performed individually in terms defined by the schedule of consultations.
Knowledge assessment methods with grading structure [139]:	The course grade is based on the activities during the semester (20%), obligatory oral presentations of the work during the semester (30%), and the success of the submitted research project (50%).
Bibliography [140]:	**Obligatory:** Acharya, L. (2013). *FLEXIBLE ARCHITECTURE FOR THE*

[139] The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.

[140] The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of theresults of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.

DYNAMIC SOCIETIES: Reflection on a Journey from the 20th Century into the Future. Master Theis, Tromsø: Faculty of Humanities, Social Sciences and Education, University of Tromsø.
Bangash, M. (2003). *Structural detailing in concrete /2nd edition/ - A comparative study of British, European and American codes and practices*. London: Thomas Telford Publishing.
Bennett, D. (2005). *THE ART OF PRECAST CONCRETE-Colour Texture Expresion*, Berlin: Birkhäuser – Publishers for Architecture.
Bergdoll, B., Christensen, P., Broadhurst, R. (2008). *HOME DELIVERY: Fabrication the Modern Dwelling.* New York: Museum of modern art.
Charleson, A. (2015). *Structure As Architecture – A source Book for Architects and Structural Engineers.* Routledge
Davies, C., (2005). *The Prefabricated Home*. London: Reaktion Books, 2005
Durmišević, E. (2006). *Transformable Building Structures: Design for disassembly as a way to introduce sustainable engineering to building design & construction* . Delft: Cedris M&CC.
Elliott, K.S. & Tovey, A.K. (1992). *Precast Concrete Frame Buildings: Design Guide*. British Cement Association
Elliott, K. S. (2002). *Precast Concrete Structures*. Oxford: Butterworth Heinemann.
Elliott, K.S., Jolly, C. (2013). *Multi-Storey Precast Concrete Frames Structures*. Wiley-Blackwell
Gušić, I. Šljivić, A. (2015). *Prefabrikacija i tehnologija montaže.* Tuzla:OFF-SET
Iwamoto, L., (2009). *Digital Fabrications: Architectural and Material Techniques.* Princeton: Princeton Architectural Press
Jenks, M., Dempsey, N. (eds) (2005). *Future Forms and Design for Sustainable Cities*. Oxford: Architectural Press.
Kieran, S., Timberlake, J. (2004). *Refabricating Architecture: How Manufacturing Methodologies Are Poised to Transform Building Construction*. New York: McGraw-Hill
Macdonald, A.J. (2018). Structures and Architecture. Routledge.
Sadler, S. (2005). *ARCHIGRAM: Architecture Without Architecture*. Cambridge: The MIT Press
Schneiderman, D., (2012). *Inside Prefab*. New York: Princeton Architectural Press

	Smith, R.E. (2010). *Prefab Architecture: A guide to Modular Design and Construction*. New Yersey: John Wiley and Sons, Inc. Trivunić, M.R., Dražić J.J. (2009). *Montaža betonskih konstrukcija zgrada*. Novi Sad: AGM knjiga Whitehead, R. (2019). *Structures by Design – Thinking, Making, Breaking*. Routledge **Additional literature:** Depending on the chosen topic of the Module, students will receive additional instructions for literature.

Code:	**Title of the subject:** ENVIRONMENTAL CONDITIONS OPTIMIZATION IN THE PROCESS OF ARCHITECTURAL HYBRIDIZATION		
Cycle: 2	**Year of the study: 2**	**Semester: 3**	**Number of ECTS credits:** 10
Status: Elective Module		**Total number of hours: 90** Optionally elaborate the distribution of hours per type: Lectures 60 Exercises 30 Seminar Field work Laboratory exercises Praxis Concert activities …	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [Do not enter names in this section. Leave the formulation as indicated in this section]		
Prerequisites:	Students regularly enrolled in the second year of the II cycle of studies, have an advantage if they have attended elective courses "Architecture and Health 1" and "Architecture and Health 2".		
Aim (aims) of the subject:	The aim of the course is to familiarize students with the issues of designing and materializing hybrid buildings within the environmental constraints of both narrower and broader, natural and built spatial contexts, as well as with existing buildings with limited potential for energy and other technical-technological improvements of both enclosure surfaces and integrated infrastructure systems. In addition to basic theoretical principles, students will also master methods and techniques for approaching the design and materialization of such architectural requirements through the course, become acquainted with certain measuring devices and sensors for monitoring buildings and narrower spatial contexts, in order to gain prerequisites for setting project tasks. In a professional sense, the goal is to master the methods and techniques available to architects in the development of concrete environmentally compatible projects through the application of interdisciplinary knowledge and skills of all participants.		
Content: *(if necessary, the outline plan per week is determined by taking into*	The implementation of the course is based on functional-organizational determinants and contemporary trends in planning, designing, and materializing sustainable and healthy built environments, taking into account the immediate environment as well as the building's		

account the specificity of organizational units)	infrastructure (community/neighborhood scale and building scale). 1. Principles of designing buildings with mixed and hybrid uses, issues related to the implementation of existing buildings (adaptations, extensions, and interpolations). 2. Principles of maintaining optimal environmental conditions for different building uses, verifying building functions through assumed usage and lifespan, active involvement of users in maintaining optimal conditions for inhabited functions. 3. Building physics and measurable environmental parameters, possibilities for monitoring and verifying designed functions throughout the building's lifespan. 4. Integrated approach to problem-solving, multidisciplinarity, and interdisciplinarity in the architectural design and materialization process for building execution. 5. Use of advanced technologies in contemporary architectural processes, sensors and data collection concepts in the environment for advanced statistical processing and AI. 6. Types of interventions in existing built environments and recommendations for using buildings with limited potential for energy and other technical-technological improvements. 7. Hybrid building infrastructure systems, minimizing energy consumption with active involvement of space users. 8. Identification of participants in the architectural hybridization process through a holistic approach to design, materialization, and use of buildings, setting project programs for specific locations.
Learning outcomes:	**Knowledge:** Acquiring knowledge to participate in the planning and design of interventions in existing and new buildings, and the implementation of hybrid functions and mixed typologies (at the community/neighborhood and building scales) within the natural and built spatial context. Understanding a variety of factors that influence the health and comfort of space users in carrying out specific activities according to selected purposes in a multidisciplinary approach. **Skills:** Opportunities for creating simulation models of buildings based on environmental parameters, building physics, and lifespan verification through active space utilization within buildings. Participation in teams working on interventions in existing and significant historical buildings to improve structural elements, materialization, and integrated infrastructure systems.

	Competences: The possibility of implementing simple monitoring systems in architectural spaces. The ability to collect data relevant to a specific architectural intervention, their advanced processing, and the formation of reports with guidelines for design and selection of materialization and integrated infrastructure elements. Proficiency to participate in teams working on projects aimed at preserving and improving the quality of life and work in the built environment.
Teaching methods:	Lectures - ex cathedra / multimedia; Laboratory work - individual tasks / supervised work (use of measuring devices in the field and setting up computer simulations); Work in simulation of architectural design studio with presentation and discussion of architectural solution development (conceptual and main project).
Assessment methods including grading structure [141]:	Students' knowledge is assessed based on successfully completed semester tasks - theoretical research paper and graphical attachments (architectural project) (60% of the total grade); Oral presentations during the semester (20% of the total grade); Practical skills - work in the laboratory and in the field (30% of the total grade).
Bibliography[142]:	Obligatory: - Barton, H., Thompson, S., Burgess, S., & Grant, M. (Eds.). (2015). *The Routledge Handbook of Planning for Health and Well-Being.* New York, NY: Routledge - Burdett, R., & Rode, P. (2018). (Eds). *Shaping cities in an urban age*. Berlin: Phaidon. - Gates, B. (2021). *How to Avoid Climate Disaster: The Solutions We Have and the Breakthroughs We Need.* Canada: Knopf - Hadrović, A. (2010). *Arhitektonska fizika.* Sarajevo: Acta Arhitectonica et Urbanistica - Krautheim, M., Pasel, R., Pfeiffer, S., Schultz-Granberg, J. (2014). *City and Wind: Climate as an Architectural Instrument*. Berlin: DOM Publishers - Leeuw, E. de., & Simos, J. (Eds.). (2017). *Healthy cities: the theory, policy, and practice of value-based urban planning*. New York, NY: Springer New York. - Oke, T. R. (1988). *Boundary Layer Climates*. New York: Routledge - Pollack, H. N. (2009). *A World Witout Ice.* New York: Avery

[141] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[142] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

- Remagnino, P.; Foresti, G. L., Ellis, T. (2005). *Ambient Intelligence. A Novel Paradigm.* New York: Springer
- Richarz, C.; Schultz, C.; Zeitler, F. (2006). *Energy-Efficiency Upgrades*. Munich: Edition Detail, Birkhauser
- Weiner, R. F.; Matthews, R. (2003). *Environmental Engineering*. Amsterdam: Elsevier
- Wiesman, A. (2008). *The World Witout Us.* New York: Picador/Thomas Dunne Books/St. Martin's Press

Additional:

- Arnautović – Aksić, D. et al. (2016). *Tipologija stambenih zgrada Bosni i Hercegovine*. Sarajevo: Arhitektonski fakultet
- Barton, H., Mitcham, C., & Tsourou, C. (2003). *Healthy urban planning in practice: experience of European cities: report of the Who City Action Group on Healthy Urban Planning*. Copenhagen: WHO Regional Office for Europe.
- Bijedić, Dž. (2012). *Holizam umjesto optimalizacije, integralni pristup u arhitektonskom stvaralaštvu*. Sarajevo: Arhitektonski fakultet
- Campbell, M. (1997). *Sensor Systems for Environmental Monitoring. Volume Two: Environmental Monitoring.* London: Blackie Academic & Professional
- Campbell, M. (1997). *Sensor Systems for Environmental Monitoring. Volume One: Sensor Technologies.* London: Blackie Academic & Professional
- Čaušević, A.; Rustempašić, N. (2014). *Rekonstrukcije zidanih objekata visokogradnje.* Sarajevo: Arhitektonski fakultet
- Dounis, A. I. (2010). *Artificial Intelligence for Energy Conservation in Buildings*. Advances in Building Energy Research. London: Earthscan
- McGrath, M. J.; Scanaill, C. N. (2013). *Sensor Technologies. Healthcare, Wellness and Environmental Applications.* New York: Apress
- Nishimura, D. W. (2011). *Understanding Preservation Metrics*. New York: Rochester Institute of Technology
- Ostalo po potrebi i zahtjevima studentskih projektnih zadataka
- Salihbegović, A. (2018). *Transparentne ovojnice i materijali u arhitekturi*. Sarajevo: Arhitektonski fakultet
- Spasojević, B. (1999). *Arhitektura stambenih palata austrougarskog perioda u Sarajevu*. Sarajevo: Rabic
- Wagner, F. W., & Caves, R. W. (2020). *Community livability: issues and approaches to sustaining the well-being of people and communities*. Abingdon, Oxon: Routledge.

Code:	**Title of the subject: BUILDING DESIGN IN ACCORDANCE WITH SUSTAINABLE DEVELOPMENT GOALS**		
Cycle: 2	**Year of the study: II (second)**	**Semester: III (third)**	**Number of ECTS credits:** 10
Status: ELECTIVE		**Total number of hours: 90 hours per semester** Lectures 4 per week / 60 per semester Exercises 2 per week / 30 per semester	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs:** Department of architectural structures and building technology / architectural design		
Prerequisites:	Fulfilled requirements for enrollment in the 3rd semester of the II study cycle.		
Aim (aims) of the subject:	Education of students in the field of sustainable construction, while respecting the goals of sustainable development - SDG (Sustainable Development Goals) with the aim of applying what has been learned in practice when designing and solving complex design tasks, in order to prevent the negative impact of built structures on the environment.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction: The theoretical part that includes the definition and understanding of the factors that influence the construction to be in accordance with circular construction (and the economy), as well as the definition and assessment of the problem of the impact of built structures on the environment. Analytical part: The candidate chooses the type of the building and "problems" in construction that will be the focus, and accordingly conducts research. Planning and design should be in line with the Sustainable Development Goals (SDGs) applied in construction. Synthesis: Research work with valorization and evaluation of collected data (which may include existing methods and existing tools for measuring environmental impact, examples of projects and impact studies from practice, life cycles of buildings, construction waste and how to reduce it, circular construction, etc..) which results in the creation of an essay as a preparation for the design phase of the diploma thesis, with a conceptual design proposal.		
Learning outcomes:	Knowledge: The theoretical part contributes to the scientific understanding of the design problem, and the graphic part that results in a proposal for a sustainable building project. The student researches and analyzes factors in construction		

	that affect the environment and, with the help of selected methods, comes up with a solution to minimize the negative impact of the selected building. Skills: Practical teaching in the module enables the student to plan, prepare and implement a theoretical research project, which results in a project program and a task for creating a design solution in the final phase. Competencies: The student is competent to independently apply the acquired theoretical knowledge in practice when designing a building, as well as to evaluate the proposed design solution in terms of its impact on the environment.
Teaching methods:	Lectures, discussions and individual consultations with corrections of the selected project (mentor work).
Assessment methods including grading structure [143]:	Attending the lecture and participating in the discussion during the semester (20%), presentation of the results of the analytical and design part of the assignment (80%).
Bibliography[144]:	Ugljen-Ademović, N. (2012). *Kritika – stimulans arhitektonskoj ideji.* Sarajevo: Dobra knjiga. Bijedić, Dž. (2012). *Arhitektura: Holizam umjesto optimalizacije – Integralni pristup u arhitektonskom stvaralaštvu*. Sarajevo: Arhitektonski fakultet. Mulhall, D., Braungart M. and Hansen K. (2019). *Creating buildings with Positive Impacts.* TUM Durmisevic, E. (2019). *Circular Economy in Construction - Design Strategies for reversible buildings.* Netherlands. Bovil, C. (1991). *Architectural Design – Integration of Structural and Environmental Systems. New York.* Brand, S. (1994). *How Buildings Learn: What Happens After They're Built*. London: Penguin. Hinkle, L. E., Loring, W. C. (1977). *The Effect of the Man-made Environment on Health and Behavio*r. Atlanta, GA: Center for Disease Control, Public health Service, US Department for Health, Education, and Welfare. Papanek, V. (1995). *The Green Imperative – Ecology and Ethics in Design and Architecture*. London: Thames & Hudson. Supplementary literature in relation to the specificity of each candidate's project.

[143] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[144] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code:	Title of the subject: SOCIALLY RESPONSIBLE ARCHITECTURE - Innovative Approaches to Housing		
Cycle: 2.	Year of the study: 2.	Semester: 3.	Number of ECTS credits: 10
Status: Elective		Total number of hours: 90 Optionally elaborate the distribution of hours per type: Lectures 50 Exercises 30 Seminar Fieldwork 5 Laboratory exercises Praxis 5 Concert activities …	
Teaching staff	Teachers and associates elected in the field to which the subject belongs [Do not enter names in this section. Leave the formulation as indicated in this section]		
Prerequisites:	Students regularly enrolled in the second year of the II cycle of studies. Preference will be given to students who, during their studies, have demonstrated an affinity for areas of Architectural Design through their achievements.		
Aim (aims) of the subject:	This course provides a theoretical and practical introduction and guidance for students in the methodology of conducting research work. It aims to foster a critical approach to the existing context, regulations, and current practices, followed by reconceptualization to enhance conditions and models.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	The subject encompasses all alternative concepts of housing and accommodation and improvements to the immediate surroundings of residential buildings, neighborhoods, and communities to design new models for human rights and care. The topics covered may include various types of housing such as cooperative housing, participatory housing, multigenerational housing, housing for the elderly, temporary accommodations in case of disasters, improvement of living conditions in social units, housing for vulnerable social groups (such as safe houses or orphanages), social housing, housing solutions for students and youth, housing for alternative lifestyles (like nomads or off-grid communities), housing for ecological communities, housing for associations and collectives, architecture of solidarity, and so on. The objective is to establish communities that are sustainable and inclusive. The implications of communal living on architectural design are numerous and varied. They relate to new patterns of land ownership, the emergence of new types of collective housing, changes towards radical care and circular economy, and crowdsourcing and peer-to-peer		

	production models. This concept of the common good allows for a reassessment of current practices and encourages radical imagination. The primary thematic unit is the spatial reform aimed at improving the conditions of the built environment for various user needs and communities.
Learning outcomes:	**Knowledge:** Upon successfully mastering the content of this subject, students will gain theoretical and practical knowledge pertaining to various alternative housing concepts and accommodation solutions. They will become familiar with the principles of socially responsible architecture and different housing types, as well as the specific needs of different user groups in the context of housing. **Skills:** This set of skills includes the ability to independently solve complex problems and pay attention to details, as well as the talent to devise innovative solutions and enhance existing models. It also involves the capacity to apply the concepts of cooperative and participatory housing in real-life situations and design residential spaces that fulfill their users' unique needs. In addition, it requires the capability to analyze and evaluate the urban environment to identify opportunities for improving neighborhoods and communities. **Competencies:** Upon fulfilling the subject requirements, which involve mastering the presented material in lectures and conducting research projects, the student becomes proficient in analyzing and synthesizing collected data. They can solve various problem environments requiring an extended social methodology in architectural design at a conceptual level and have developed a focus on socially responsible architectural concepts. In the process of designing housing projects, students develop teamwork and collaboration skills, communication skills necessary for working with various stakeholders including clients, communities, and public institutions, as well as awareness of the social, economic, and ecological aspects of housing design. They are able to apply these insights in practice, making them proficient in socially responsible architectural design.
Teaching methods:	Lectures involve the presentation of theoretical and practical examples related to the field using various open and horizontal communication methods. Under the supervision of the subject teacher, students work on individual research papers during exercises, which they are required to present several times during the semester. Consultations with students regarding the preparation of research papers are

	conducted individually and, at times, are defined according to the consultation schedule.
Assessment methods, including grading structure [145]:	The final grade is based on the semester's activities (20%), mandatory oral presentations of work (30%), and the success of the submitted research project (50%).
Bibliography[146]:	Obligatory: Aureli, Pier Vittorio. Living and Working. Cambridge, Mass.: MIT Press, 2022. Aureli, Pier Vittorio; Tattara, Martino; Dogma. Loveless: the minimum dwelling and its discontents. Milano: Black Square, 2019. Alastair, Fuad-Luke. Design Activism. London: Earthscan, 2009. Awan, Nishat; Schneider, Tatjana; Till, Jeremy. Spatial agency: other ways of doing architecture. London: Routledge, 2011. Cupers Kenny. Use Matters- An Alternative History of Architecture. New York: Routledge. 2013. Hamdi, Nabeel. Housing Without Houses: Participation, Flexibility, Enablement. New York: Van Nostrand Reinhold, 1991. IBA_Vienna 2022; Technische Universität Wien Futurelab. New social housing: positions on IBA_Vienna 2022. Berlin: Jovis, 2020. Karakusevic, Paul; Batchelor, Abigail. Social housing: definitions and design exemplars. Newcastle: RIBA Publishing. 2019. Kubey, Karen. Housing as intervention architecture towards social equity. Architectural Design. Volume 88 Putnam, D.Robert. Kuglati sam, Slom i obnova američke zajednice. Novi Sad: Mediterran Publishing, 2008. Till, Jeremy; Peter Blundell Jones. Architecture and participation. New York: Spoon Press, 2005. VanToorn, Roemer. "After Criticality- The Passion for Extreme Reality in Recent Architecture... and Its Limitations." U *Organizing for change, space: integrating architectural thinking in other fields*, uredio Michael Shamiyeh i DOM Research Laboratory (Linz), 19-39. Basel: Birkhäuser, 2007. Yaneva, Albena. Mapping Controversies in Architecture. Burlington: Ashgate Publishing, 2012.

[145] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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	Additional: Depending on the module's chosen topic, the subject teacher will provide further instructions for literature.

ELECTIVE COURSES IN 3rd SEMESTER

Code: 01.05.15	Title of the subject: ARCHITECTURE AS AN ENERGY SYSTEM		
Cycle: 2nd	Year: 2nd	Semester: 3rd	Number of ECTS credits: 3
Status: ELECTIVE		Total number of hours: 30 + 0 = 30 Lectures Exercises Field work	

Teaching staff	
Prerequisites:	
Aim (aims) of the subject:	Presentation of architecture (urban ensemble, architectural object) as an energy system and understanding of the importance of the relationship between the external influences and human solutions of the architectural tasks.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	According to the content of compulsory textbooks: Hadrović, A. (2018). Architecture as an Energy System. Sarajevo: Faculty of Architecture of the University of Sarajevo. WEEKS 1-3: SYSTEM DESCRIPTION (size and character sistsema). Energy (Significance, Sources - Conventional and Unconventional, Perspectives). WEEKS 4-8: Architectural object - volume ratio and boundary area (shape factor). Topline losses and thermal gains (specific solutions to architectural elements and materialization). WEEKS 9-11: Modern and futuristic solutions (shaping - materialization. SESSIONS 12-15: an analysis of the most reputable objects in the world that portray the contents of the subject in a difficult way.
Learning outcomes:	Knowledge: The student should acquire empirical knowledge that the architectural object is treated as an energy system; Skills: Students, using reference software, would be able to create energy-efficient solutions for architectural objects Competence: the student should be able to see architecture as the unity of its artistic and exemplary-empirical components.
Teaching methods:	Lectures with projections that follow the subject matter.
Assessment methods including grading structure [147]:	Lecture tracking 5% Individual (seminary) workshop 95%
Bibliography[148]:	Required: Hadrović, A. (2018). Architecture as an Energy System. Sarajevo: Faculty of Architecture of the University of Sarajevo. Supplementary: Balcomb, J. D. (1992). *Passive Solar Buildings*. Cambridge, MA: MIT Press.

[147] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[148] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Cook, J. (1996). *Passive Cooling*. Cambridge, MA: MIT Press. Granjean, E. (1972). *Vohnpysiologee*. Zurich: Artemis. Hadrović, A. (2008). *Bioclimatic Architecture, Searching for a Path to Heaven*. North Charleston, SC: Booksurge. Hadrović, A. (2010). *Arhitektonska fizika*, drugo izdanje. Sarajevo: Arhitektonski fakultet. Larson, R. W. (1996). *Implementation of Solar Thermal Tehnology*. Cambridge, MA: MIT Press. Matić, M. (1988). *Energija i arhitekura*. Zagreb: Školska knjiga. Moritz, K. (1975). *Pravilno i pogrešno*. Belgrade: Gradjevinska knjiga. Rudolfski, B. (1976). *Arhitektura*. Belgrade: Građevinska knjiga. Journal: *Texhniques et Architecture* (special editions: 291/73, 315/77) Journal: *Domus, The Japan Architecture, DBZ*

Code of subject: 01.02.39	**NAME OF SUBJECT: DEFINING AMBIENTAL UNITS – THE OLD TOWN MUNICIPALITY (OTTOMAN PERIOD)**		
Cycle : 2nd	**Year of study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: ELECTIVE		**Total number of hours: 60** Optional distribution of hours by type: **Lectures 1** **exercises 1** **Field work 2**	
Participants	Teachers and associates selected in the field to which the subject belongs / subject Area for theory and history of architecture and protection of architectural heritage		
Pre-requisite for enrollment:	-		
Goal (objectives) of the course:	**Historical context:** Definition of the ambient units of the Ottoman period. In Bosnia and Herzegovina, this period lasted nearly five hundred years, so this subject is studied from 1463 to 1868. **Theoretical context:** In the form of a workshop / workshop, familiarize students with the methodology of developing research and documentation material, which is used in practice as a basis for the development of plans, projects, and as guidelines for granting urban approvals and building permits. **Practical context**: The goal is to provide realistic insights about the space in which there are architectural values, properly valorize and through further construction preserves, and does not degrade.		
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	- - Getting acquainted with the selected location - Analysis (research and documentation) of part of the environment - Methodological approach - research, analysis, valorization of areas with visible traces of the Austro-Hungarian period; - Getting to know the location on the ground - Recording (technical drawings and photo documentation) - Determining the cause of degradation; - Defining the level of intervention and determining the guidelines for the preservation and optimal presentation and revitalization of such areas, all based on the methodology learned in previous years of studies;		

	- Digitization of finalized documentation and creation database through their own recordings approved by teachers and associates.
Learning outcomes:	**Knowledge:** Recognize and evaluate the technical and stylistic characteristics of the Ottoman period at all technical levels. Adoption of methodology and methodological approach to research of ambient values. **Skills:** Students acquire the opportunities offered by fieldwork and acquire style recognition skills through construction, materialization and details that are visible, valorized and accessible during fieldwork. **Competences:** Possibility and competence to apply all the acquired knowledge in the work on the protected architectural heritage, but also on ambient units that have not yet passed the protection process. Creating a database that will be useful for them and for all future generations.
Methods of teaching:	Possibility of field teaching depending on subject matter. Individual work with students in individual project segments. Collective work on the development of complete documentation.
Knowledge testing methods with a rating structure[149]:	Exercises - semester assignment - 45-90% Activity - 0-10% Final exam - 55-90%
Literature[150]:	**Required**: Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh Akšamija L., Arhitektura svrhe, . Arhitektonski fakultet, Sarajevo, 2004. Chabbouh Akšamija L., Šabić L., Tradicionalna travnička kuća, Zavičajni muzej u Travniku, Arhitektonski fakultet, Sarajevo, 2018. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015.

[149] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[150] The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

	Hrasnica, M., Arhitekt: Josip Pospišil - život i djelo, Sarajevo, Arhitektonski fakultet, 2003. Husedžinović , S., Valorizacija islamske sakralne arhiekture Banja Luke s analizom njenog rušenja kroz povijest (neobjavljena doktorska disertacija), Zagreb, 1997. Krzović, I., Arhitektura BiH 1878-1918, Sarajevo, Umjetnička galerija BiH, 1987. Kurto, N., Arhiektura BiH, razvoj bosanskog sloga, Sarajevo, Međunarodni centar za mir, 1998. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., Zaštita graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Redžić, H., Islamska umjetnost (Umjetnost na tlu Jugoslavije), Beograd, Zagreb, Mostar, IZJ, 1975. Redžić, H., Studije o islamskoj arhiektonskoj baštini, Sarajevo, Svjetlost, 1983. Sanković Simičić V., Revitalizacija graditeljske baštine, NNP naša riječ d.o.o., Sarajevo, 2000. Schuller, M., Building Archaeology, München, ICOMOS, 2002. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. Zevi, L., Il Manuale del Resauro Architettonico, Mancosu editore, Roma, 2002. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.05.41	**Subject title: BUILDING FINALIZATION AND DETAILS**		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of credits: 3** (according to ECTS)
Status: ELECTIVE		**Total hours: 30 (2/weeek)** Optional distribution of hours by type: **Lectures** **Exercises** **Seminar** Field work Laboratory exercises Practice Concert activities ...	

Teaching staff:	Teachers and associates engaged in the scientific field "Urbanism and Spatial planning"
Enrolment requirements:	-
Subject objective(s):	The course aims to enable the student to independently solve the difficult problems of solving architectural details at all stages of the creation of architecturally defined space.
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*	• Function of a building envelope / obstacles and filter • Detail and circuit • The theoretical basis of approach to solving the details • Theoretical background - connection theory • The approach to solving the design details: • non-load-bearing structures (partition walls, suspended ceilings, elevated floors, espiers, canopies); • details on the facade - problems and solutions; • internal details; • details of installation of insulation (thermal, waterproofing, sound insulation and acoustic linings) • finalization of outer surfaces
Learning outcomes:	Knowledge: Training students for an integrated, comprehensive approach to work on the design and construction of an architectural facility. Understanding the theory of connections that are established between structural elements, as well as between constructive assembly structures. Skills: Competence for independent professional work on architectureal finalization details. Competencies: Independent work on the elaboration of the technical documentation, architectural phase - details.
Teaching methods:	Lectures and interactive discussion, working on concrete examples.
Knowledge assessment methods with grading structure[151]:	The grade from the course is based on the presence and engagement in interactive classes (20%), as well as the quality of eseys and prezentation in the seminar (practical application of the knowledge - 80%).

[1] **The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton**

Literature[152]:	Obligatory: • *Excerpts from readings - summary of related materials* Additional: • McLeod, V., *Detail in Contemporary Residential Architecture*, Laurence King Pub., LTD, 2007. • McLeod, V., *Detail in Contemporary Landscape Architecture*, Laurence King Pub, LTD, 2008. • McLeod, V., *Detail in Contemporary Timber Architecture*, Laurence King Pub, LTD, 2010. • McLeod, V., *Detail in Contemporary Glass Architecture*, Laurence King Pub, LTD, 2011. • Peulić, Đ., *Konstruktivni elementi zgrada*, Croatiaknjiga, Zagreb, 2002.; • Mittag. M., *Građevne konstrukcije,*Građevinska knjiga, Beograd, 2003.

[152] **The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo**

Code: 01.04.36	**Title of the subject: ENVIRONMENT PHENOMENOLOGY**		
Cycle: 2nd	**Year of the study:** 2nd	**Semester: 3rd**	**Number of ECTS credits:** 2
Status: Elective		**Total number of hours:** 15 (1+0) Lectures 15	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning		
Prerequisites:	None.		
Aim (aims) of the subject:	A synthesis of urban science and practice; Examining philosophical, culturological-artistic, phenomenological and practical findings, valorisation of the global essence of shaping the human environment;		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Urbanisam and communication (urban semiotics, urbanism and the consequence of communicating, spatial initiator of communication); Urban matrix (the nature of the matrix, determinism in urbanism, urban connotation and deconnotation, urban code, urban space and its phenomenology); Urban interaction in space (urban idea historicity, kinds of urbanits, functionalism and non-functionalism); Spatial relationship of the urban code (theoretical determinants, outer codex area influence – global regions – aesthetical code and transformations); Contextualism in urbanism (structuralisation of the constructed, urban language of the physical structure, functional-structural growth and development temporality, spatial transparency); Socio-conceptual identification of urbanity, the ideal and traces, social participation and the urban); Place phenomenology (the genius loci contextualism, global regional codes); Componential analysis of an urban space (system rationalisation, interdependence of problem causes and physical structure design processes, acceptable arithmetic analysis, environmental dependence, sustainable development – an insight into the third generation of the term).		
Learning outcomes:	Knowledge: Understanding the issues and goals – the essence and importance of shaping and reshaping the human environment. Skills: Ability to understand and parse the compositional elements of city development, observed in the synthesis of theoretical and practical knowledge; Competences: Understanding the need for critical analytical consideration of specific urban spaces, seen in the context of		

	interdependence of theoretical guidance and practical applications;
Teaching methods:	Lectures and individual consultations; Theoretical elaboration of urban phenomena in the analysis of the essence of the relationship between causes and needs for (re)shaping human living space;
Assessment methods including grading structure [153]:	Attendance at lectures 50%. Oral exam 50%. If students fail to achieve 50% of the maximum grade, written exam is obligatory. Students take final exam if they achieve less than 70% of the maximum grade.
Bibliography[154]:	Obligatory: Bacon, N. E, Design of Cities, M.I.T. Press, Chicago, 1978 Brolin, C. B, Arhitektura u kontekstu, Građevinska knjiga, Beograd, 1988 Colin, R, i Koetter, F, Grad kolaž, Agora, Građevinska knjiga, Beograd, 1988 Čakarić, J, Semantika transformacija urbo-vodnih konteksta, Mas Media d.o.o., Sarajevo, 2012 Hamidović, M, Kontekstualizam u urbanizmu, (Separat), Arhitektonski fakultet, Sarajevo, 1998 Hamidović, M, Transformacija arhitekture grada, (Separat: Uvod, Prakticum), Arhitektonski fakultet, Sarajevo, 1992 Linch, K, Slika jednog grada, Agora, Građevinska knjiga, Beograd, 1974 Venturi, R, Složenost i protivrečnosti u arhitekturi, Agora, Građevinska knjiga, Beograd, 1987 Additional: The same reading recommended for the elective group Urban design.

[153] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[154] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.40	**Title of the subject: COMMERCIAL BUILDINGS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours: 90** **30 Lectures** **60Exercises**	
Teaching staff	**Professors and teaching assistants affiliated to Department of design**		
Prerequisites:	none		
Aim (aims) of the subject:	The aim of the subject is to introduce students to the specific type of buildings.		
Content:	1. Historical overview of the phenomenon and development of the trade and commercial buildings 2. Principles of trade dynamic and development. 3. Classification of commercial buildings. 4. Disposition of the commercial buildings in the urban fabric. 5. Access to the commercial buildings and their supply. 6. Types and disposition of the goods in shopping malls. 7. Organisation of the sale departments in the shopping malls. 8. Equipment of the shopping malls. 9. Organisation of stairs and corridors within the shopping malls 10. Representative examples of shopping malls. 11. Phenomenon and development of the shopping malls 12. Classification of shopping malls 13. Examples of the American shopping centres 14. Examples of the European shopping centres 15. Visiting a commercial object in B&H.		
Learning outcomes:	Knowledge: Acquiring specific knowledge of commercial buildings and their design. Skills: Mastering skills of practical application of specific knowledge of designing commercial building. Competences: Designing commercial buildings in practice		
Teaching methods:	Ex-cathedra lectures; individual consultations, practical classes – graphical presentation.		

Assessment methods including grading structure [155]:	Partial exams/presentation, two during semester 16% + 16%, 64% graphical assignment, Lecture Activity and attendance 4% and / or final exam/final presentation 32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[156]:	***Obligatory:*** **1.** Bilalić, Sabrija: ***Specifičnosti u razvoju svjetskih trgovačkih centara u komparaciji sa pozitivnim karakteristikama Stare sarajevske čaršije,*** Sarajevo, 2003 (magistarski rad); **2.** Janković, Živorad: ***Primarne, sekundarne i tercijarne privredne djelatnosti***, Sarajevo, Institut za arhitekturu, urbanizam i prostorno planiranje, 1989; **3.** Bilalić, Sabrija: ***Razvoj trgovine i tgovački centri,*** skripta **4.** Bilalić, Sabrija: ***Robne kuće, tržnice i distributivni centri,*** skripta **5.** Hocquel, Wolfgang i dr: ***Architectur für den Handel,*** Basel-Boston-Berlin, Birkhauser, 1996; **6.** Gretz, Friedrich: ***Läden richtig planen, Fehler vermeiden,*** Stuttgart+Zürich, Karl Krämer Verlag, 2000; **7.** Coleman, Peter: ***Schopping Environments, Evolution, Planning and Desing***, London_Oxford, Arcitectural Press, Elsevier, 2006, 2010; ***Additional***: **8.** Koolhaas Rem i dr: ***Harvard deign school guide to shopping,*** Koln_London_Madrid_nev Yor, Taschen GmbH, 2000; **9.** Gruen, Victor and Lary Smith: ***Shopping Towns USA,*** New York, Reinhold Publishing Coropration. 1960;

[155] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[156] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

10. Redstone, Louis G.: ***New Dimenzions in Shopping Centers and Stores***, New York etc., McGraw-Hill Book Company, 1973;
11. Beddington, Nadine: ***Shoping centres, retail development, design and management***, Oxford, Butterworth-Heinemann Ltd., 1991;
12. Broto, Carles: ***Shopping Malls***, Barcelona, Arian Mostaedi, 2005;
13. Chris van Uffelen: ***Malls & Department Stores,*** Braun Publishing AG, 2009.

Code: 01.04.38	**Title of the subject: CONTEXTUALISM IN URBAN DESIGN – Triad consequences of redesign**		
Cycle: 2nd	**Year of the study:** 2nd	**Semester:** 3rd	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours:** 45 (1+2) Lectures 15 Exercises 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Introduction to methods of urban transformation matrix detection, in accordance with articulation of historical and functional context; Parsing the basic premises of a unique city matrix and structuring of indicators as the basic principles of redesigning ensemble (volume, structure) and urban functions; Criteria for levels of the city;
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Typology of architectural-urbanisatic structures and their forms on the basis of design theory and process within the contextualism model: changes in time, plan matrices, shape and form of physical structures, a detailed, criteria-based and functional treatment of city architecture; Elements of city architecture – a triad relationship: complex – context – form; Elaboration of the aesthetic component and the relationship towards the constructive context; Neofunctionalism and urbanism – functional and typological differentiation; A historical overview of urban character and architecture of a city, development context and urban theory; Urban and spatial consequences of interpolations on the basis of contextualism (the notion and scope levels); Analysis and comparison of the examples of domestic and world practice according to elements and plan and c) Conclusions and recommendations of ethical, aesthetical, environmental, temporal and design method in the procedure of articulation of urban practice contextualisation type;
Learning outcomes:	Knowledge: Understanding structural analysis of urban spatial sequences and urbomorphology; Skills: Ability to create a critical analytical review of concrete urban spatial sequence, viewed on the basis of the need for change and from the perspective of contextualism of the shape and form of the city;

	Competences: Ability to choose a design method in the process of new articulation of urban spatial sequences in the context of the environment;
Teaching methods:	Theoretical part (lectures and individual consultations) and practical part (practical classes - establishing analytical criteria and conducting comparative analysis of examples and procedures in the process of (re)designing urban spatial sequences for the purpose of making an urban project and its implementation);
Assessment methods including grading structure [157]:	Individual work at practical classes, conversation upon completion of the assignment, final written exam for students who fail to realise the required minimum of points.
Bibliography[158]:	Obligatory: Bacon, N. E. (1978). Design of Cities. Chicago: M.I.T. Press. Brolin, C. B. (1988). Arhitektura u kontekstu (D. Jauković, Transl.). Belgrade: Građevinska knjiga. Colin, R., Koetter, F. (1988). Grad kolaž. Belgrade: Građevinska knjiga. Čakarić, J. (2012). Semantika transformacija urbo-vodnih konteksta. Sarajevo: Mas Media. Hamidović, M. (1998). Kontekstualizam u urbanizmu (separat). Sarajevo: Arhitektonski fakultet. Hamidović, M. (1992). Transformacija arhitekture grada (separat: Uvod, Praktikum). Sarajevo: Arhitektonski fakultet. Lynch, K. (1974). Slika jednog grada. Belgrade: Građevinska knjiga. Venturi, R. (1987). Složenost i protivrečnosti u arhitekturi. Belgrade: Građevinska knjiga. Additional: Other literature recommended in accordance with the narrow thematic determinants of the elective group.

[157] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.04.44	Title of the subject: URBAN LANDSCAPE DESIGN		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 30** Optionally elaborate the distribution of hours per type: Lectures 15, Exercises 15, Seminar, Field work Laboratory exercises, Praxis, Concept activities …	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [Do not enter names in this section. Leave the formulation as indicated in this section]
Prerequisites:	-
Aim (aims) of the subject:	Mastering the methodology of urban design in complex relationships of city functions and their organization in space. Designing housing settlements of different density as the basic urban function. The relationship between functions: housing and centrality
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Urban design methodology; Planning documentation research; The relationship between housing and other urban functions; The division of housing in accordance with population density; The relationship between urban morphology, composition and housing objects' typology; Interdependence of concepts, composition and the realization of traffic in housing and contact zones; Traffic in a settlement: the basic principles, route design, hierarchy, capacity and dimensioning, profiles; Parking spaces, public city traffic, Communication corridors in a settlement (vehicular, pedestrian, mixed...); Organization of settlements in the context of the housing units and accompanying content relationship; urban equipment basics and dominants of urban morphology; Reaction of the population within settlements; Open spaces in housing zones; Presentation of the concept (in mid-semester); Final presentation and discussion in front of an audience (fellow students, assistants, professors).
Learning outcomes:	Knowledge: Development of analytical and critical observation of the overall relations in an urban surrounding. Understanding space as a scengraphic framework for the realization of complex interaction processes between citizens and objects functioning for the fulfilment of citizens' needs. Skills: Application of landscape design methodology to the design of the overall urban landscape Competences: Landscape planning and design of urban landscape.
Teaching methods:	Lectures – oral, visual, comparative lectures related to designing issues; Individual work on a case study.

Assessment methods including grading structure [159]:	Attendance and participation 30% Practical classes – case study 70% Final exam in case a student fails to achieve the required minimum of points.
Bibliography[160]:	Obligatory: Bacon, E. N. (1969). *Design of Cities*. London: Thames & Hudson. von Dieter, P. (1997). *Städtebau – Band 2: Stadtebauliches Gestalten*. Stuttgart – Berlin – Cologne: Verlag W. Kohlhammer Architektur GmbH. Gosling, M. (1984). *Urban design*. New York: Academy Editions, St. Martin's Press. Krier, R. (1979). *Urban space*. London: Academy editions. Lynch, K. (1974). *Slika jednog grada*. Belgrade: Građevinska knjiga. Norberg-Schulz, C. (1975). *Egzistencija, prostor i arhitektura*. Belgrade: Građevinska knjiga. Norberg-Schulz, C. (1979). *Genius loci*. London: Academy Editions. Sitte, C. (1967). *Umjetničko oblikovanje gradova* (Đ. Tabaković, Transl.). Belgrade: Građevinska knjiga. Žuljić, V. J. (1984/1990/2000). *Separati*. Sarajevo: Arhitektonski fakultet. Additional: Ian McHarg: „Design with Nature" (Cardell City, N. Y.: Narum! His/ory Press) 1969)

[159] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[160] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.03.53	Title of the subject: PERSONS WITH PHYSICAL IMPAIRMENT AND ARCHITECTURAL BARRIERS		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours: 45** **15 Lectures** **28 Exercises** **2 Field work**	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs, Department of architectural design**
Prerequisites:	none
Aim (aims) of the subject:	The aim of the subject is to introduce students to this specific type of buildings.
Content:	1. Recommended reading and terminology 2. A historical overview 3. Models of physical impairment 4. Who are physically impaired persons? 5. The number of physically-impaired persons; 6. Philosophical, sociological, ethical, medical, economical and other aspects of the issue 7. Legislation and other regulations 8. Orthopedic support devices: wheelchair, cane, crutches, walkers, prosthetics, segway-wheelchair, exoskeleton… 9. The basic wheelchair-related normative 10. The basic and complex architectural barriers Housing: 11. Living room, kitchen, sanitary block, bedroom... 12. Public objects; 13. Public garages and parking 14. Traffic means and travelling (car, train, plane, ship) 15. Field work (visiting representative objects)
Learning outcomes:	Knowledge: Acquiring specific knowledge of persons with physical impairments and architectural barriers and their design Skills: Mastering skills of practical application of specific knowledge of designing buildings without barriers. Competences: Designing buildings without barriers in practice
Teaching methods:	Ex-cathedra lectures; individual consultations, practical classes – graphical presentation.

Assessment methods including grading structure [161]:	Partial exams, two during semester 16% + 16%, graphical assignment 64%, lecture activity and attendance 4% and / or integral/final exam 32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[162]:	Obligatory: 1. Fejzić, Emir i Irma Fejzić**: Humaniziranje izgrađene okoline - Osobe umanjenih tjelesnih mogućnosti, Sarajevo**, Arhitektonski fakultet u Sarajevu, 2016; 2. Fejzić, Emir i Irma Fejzić: **Humaniziranje izgrađene okoline - Prostorne barijere**, Sarajevo, Arhitektonski fakultet u Sarajevu,2016. Additional: ***In BCS language:*** 1. Follette Story, Molly i dr.: ***Univerzalni dizajn / Dizajniranje za ljude svih godina i sposobnosti***, Tuzla, Informativni centar za osobe sa invaliditetom "Lotos" Tuzla i The Center for Universal Design N.C. USA, 2004; 2. ***Arhitektonsko-građevinski propisi za pomoć ljudima sa invaliditetom***, Doboj, Udružewe paraplegičara, oboljelih od dječije paralize i ostalih tjelesnih invalida regije Doboj, 2003; 3. Fejzić, Emir: ***Osobe umanjenih tjelesnih sposobnosti i arhitektonske barijere***, Sarajevo, Arhitektonski fakultet u Sarajevu i Informativni centar za osobe sa invaliditetom "Lotos" Tuzla, 2001; 4. Marić, Andreja: ***Prostorna organizacija igre fizički oštećene dece u uslovima savremenog stanovanja***, Beograd, Institut za arhitekturu i urbanizam Srbije, 1979, posebno izdanje, br. 8;

[161] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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5. ***Potrebe invalida u zgradama***, Doboj, Udruženje distrofičara Doboj, -.

In foreign languages:

1. Ackermann, Kurt i dr.: ***Behindertengerechte Verkehrsanlagen***, Düsseldorf, Werner Verlag GmbH & Co. KG., 1997.
2. Grosbois, Louis-Pierre: ***Handicap et construction***, Paris, Le Moniteur, 1996 ;
3. Stemshorn, Axel i dr.: ***Barrierefrei Bauen für Behinderte und Betagte***, Leinfelden-Echterdingen, Verlagsanstalt Alexander Koch GmbH, 1995;
4. Marx, Lothar: ***Barrierefreies Planen und Bauen für Senioren und behinderte Menschen***, Stuttgart+Zürich, Karl Krämer Verlag, 1994.

Code: 01.04.35	Title of the subject: THE DEVELOPMENT AXIS – THE SPATIAL-PLANNING THEORY		
Cycle: 2nd	Year of the study: 2nd	Semester: 3rd	Number of ECTS credits: 3
Status: ELECTIVE		Total number of hours: 45 Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** [field – urbanism and spatial planning]
Prerequisites:	none
Aim (aims) of the subject:	Providing basic instructions about the specific and current thematic area of spatial planning. Determining elements and criteria as priorities for drafting a contemporary, planned approach in defining the basic principles of urban system development in space.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Definition of terms "axis of development" and "development" and key words: beginnings of the axis of development theory (linear city and theories); contemporary axis of development theories; developmental axis application possibilities worldwide and in BiH; conurbation and metropolisation as a specific form of spatial organisation. Topics treated at practical classes: Comparative graphic-analytical analysis of development in space according to the axis of development system; possibilities of developing BiH this way.
Learning outcomes:	Knowledge: Acquiring skills in analysing morphological-functional development of space and typologisation; Ability to prepare, process, interpret and present the data with the use of suitable qualitative and quantitative techniques. Skills: Competences:
Teaching methods:	Comparative presentations with adequate samples.
Assessment methods including grading structure [163]:	Semestral assignement (40%), activity (10%) and final exemine (oral and graphical presentation of the individual/group work and a critical analysis of the results) (0–50 %).

[163] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Bibliography[164]:	Obligatory: Čaldarević, O. (1985). *Urbana sociologija*. Zagreb: Globus. Kečkemet, D. (1981). *Grad za čovjeka*. Zagreb: Društvo historičara umjetnosti Hrvatske. Marinović-Uzelac, A. (2001). *Prostorno planiranje*. Zagreb: Dom svijet. Scargill, D. J. (1979). *The form of cities*. London: Bell & Hyman. Supek, R. (1987). *Grad po mjeri čovjeka*. Zagreb: Naprijed. Žuljić, V-J. (1996). Osovine razvoja sarajevske regije – Ekonomija, Sarajevo. Additional:

[164] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.06.13	**Title of the subject:** FIRE RESISTANCE OF STRUCTURES		
Cycle: 2nd	**Year: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours:** 30 Lectures Exercises Seminar	
Teaching staff	Teachers and associates elected in the field to which the subject belongs - Multidisciplinary: Load-bearing Structures and Fire Engineering		
Prerequisites:	-		
Aim (aims) of the subject:	Acquiring knowledge on the fire performance of construction materials, elements and structures in fire situations, as well as on the of active and passive fire protection measures of architectural structures and the relevant legislature in BiH, EU and in the world.		
Content:	*Fire as a phenomenon*; The notion of fire; Definition of fire. History of fire. Fire related statistics. *Scenario of real fires of architectural buildings;* Grenfell Tower Fire London 2017. Madrid Winsdor Tower 2005. Caracas Parque Tower 2004. Düsseldorf Airport Fire 1996. Great Fire in Göteborg Discoteque 1998. *Causes and ways of initiation of fire*. Types of fire. Burning. Heat conductivity. Flammability. Flame. Smouldering. Theoretical basics of fire. Physical and chemical interpretation of a fire initiation. Fire load and the specific fire load. Caloric value. Combustibility. Fire development theory. Standard fires: ISO 834. ASTM E 119. JIS A 1304, Parametric fire curves. Spreading of heat in fire. Heat energy transfer in fire. Spreading of flames in fire. Flame spreading speed. *Fire performance of construction materials exposed to high temperatures*. Steel. Concrete. Steel reinforcement. Timber. Aluminium. Cement. Lime. Gypsum. Fabrics. Plastic materials. Acrylic materials. Fluoroplastics. Nylon. Polyethylene. Polycarbonates. Polystyrene. Polyvinyl chlorides. Mineral wool. Polyurethanes. Silicon. Natural and synthetic rubber. *Fire resistance*. The notion of fire resistance. Fire resistance of structural elements. BAS TC 37 – "Fire Safety in Buildings"; CEN/TC 127 – "Fire Safety in Buildings". Fire protection measures in architectural buildings. Active and passive fire protection measures. Fire compartment. Fire door. Firewall. Ventilation channels and openings. Fireproof systems and their applications.		

	Evacuation routes. Fire stairways. Fire roads. Emergency exits. Fire fighting. Fire hydrant network. Fire extinguishers. Sprinkler systems. Fire alarms. Emergency lighting. Fire protection measures. Legislation in BiH. Legislation in the EU.
Learning outcomes:	**Knowledge:** By mastering the content of this course, students will understand the issues related to causes and spreading of fire in architectural buildings and fire performance of different kinds of structures and materials in fire situations **Skills:** Application of active and passive fire protection measures in buildings in design, construction and service life of the buildings **Competences**: Capability of analysis of fire action on the structure, fire risk and vulnerability assessment of the building and its structure by fire action
Teaching methods:	Auditory lectures and practical sessions. Every student is supposed to complete two seminar assignments, one related to the fire performance of construction materials, the other related to active and passive fire protection measures. Seminar assignments are presented by power point presentation with a follow-up discussion between candidates and moderated by the professor.
Assessment methods including grading structure [165]:	The final grade consists of an regular attendance (max 10%), activity in lectures and discussions (max 10%), two seminar assignments with presentations (max 20% each) and Final Exam (max 40%).
Bibliography[166]:	**Obligatory:** Džidić, S. (2015). *Otpornost betonskih konstrukcija na požar*. Sarajevo: IBU; Egan, D. M. (1990). *Građevinske konstrukcije i požar*. Beograd: Građevinska knjiga; Hadžiselimović, E., Kleut, N. (1991). *Požarna karakterizacija materijala i elemenata građevinskih konstrukcija*. Sarajevo: NIRO Institut zaštite od požara i eksplozije. **Additional:** Džidić, S, Kovačević, I, Kozlica, S. (2017) Concrete Studies, Sarajevo IBU.

[165] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.04.45	**Title of the subject: RECREATION AND FREE TIME**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours: 45** Lectures: 15 Exercises: 30	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs**
Prerequisites:	-
Aim (aims) of the subject:	Introducing students to the basic elements the of perception of space in the urban context and serving the purpose of leisure, recreation – free time. The importance of developing an understanding of dynamics of space, the need for changes and improvement. Supporting the *mens sana in corpore sano* idea, through creation of space for different kinds of recreation within the urban tissue, insisting on the application of contemporary functional-technical and aesthetically-creative solutions for urban design, potentials of which we frequently neglect, especially when its ecological performances are in question. The goal is to introduce students with the responsibility of creating an urban environment, as well as finding the more efficient and more contemporary ideas for raising the overall life quality level – Urbanity in a City.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1 Recreation put into function of spending free time; 2-3 Notion and kinds of recreation; 4-6 Recreation spaces and surfaces; 7-8 Classification of recreational space in an urban and non-urban zone; 9-10 Redefining certain urban spaces in the function of realising positive balances aimed for recreation «in the nearest surrounding»;11 Weekend recreation / types and organisation models; 12 Tourist zones and settlements with accompanying characteristics; 13 Resort-climatic-medical zones and settlements / characteristics and organisations of space; 14-15 Redefining the BROWNFIELD zones functioning for creation of a quality content: holiday, fun, sport, as well as for the purpose of satisfying cultural and other needs of the population, realised as program framework for various forms of free time.

Learning outcomes:	Knowledge: Through training in a specific location with which a student realizes a space relationship - a user can assume an outcome that is at the same time creation and wellbeing at the community and individual level. Skills: During the semester, a student analyzes and develops a concept with details tailored to the subject matter Competencies: The student's ability to recognize in the almost "perfect" city landscape the potential for change, and for those who will take on the necessities of a city man, who has more and more free time every day, and less and less choice of how to spend it.
Teaching methods:	Theoretical package, seminar activities, team work distributed through topics – in relation to the UP6 project, possibility of organising workshops as a form of additional encouragement.
Assessment methods including grading structure [167]:	The grade from the subject is derived from the project -70, theoretical exam 20 and student activities-10%.
Bibliography[168]:	Obligatory: Giedion, S. (1969). *Prostor, vrijeme, arhitektura*. Belgrade: Građevinska knjiga. Hadžimurtezić, A. *Sarajevo pješački grad* (Master's thesis defended at the Faculty of Architecture in Sarajevo) Jenks, M. (2000). *The Compact City, a Sustainable Urban Form?* Nondon, New York: E & FN Spoon Press. Le Corbusier, C. J. (1974). *Način razmišljanja o urbanizmu* (T. Maksimović, Transl.). Belgrade: Građevinska knjiga. Lynch, K. (1974). *Slika jednog grada*. Belgrade: Građevinska knjiga. Marinović – Uzelac, A. (1986). *Naselja, gradovi, prostori*. Zagreb: Tehnička knjiga. Mc Harg I. L. (1969). *Design with Nature*. New York: The Natural Histry Press. Mutloch, J. L. (2000). *Introduction to Landscape Design.* New York: John Wiley & Sons.

[167] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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	Peters P. (1977). *Fussgangerstadt.* Munich: Callwey Press. Robertson, M., Tugnutt, A. (1987). *Making Townscape.* London: Batsford, Ltd. Shirley, P., Moughtin, C. (2004). *Urban Design – Green Dimensions.* London: Routledge. Uhlig, K. (1979). *Pedestrian Areas: From Malls to Complete Networks.* New York: Architectural Book Publishing Company. Wildermuth H. (1994). *Priroda kao zadaća.* Zagreb: Državna uprava za zaštitu kulturne I prirodne baštine. Elective: The current spatial planning and special area protection documents; examples from the global practice and individual projects.

Code: 01.03.45	**Title of the subject: FAIRGROUNDS AND EXHIBITIONS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: Elective		**Total number of hours: 45** **15 Lectures** **28 Exercises** **2 Field work**	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs, Department of architectural design**		
Prerequisites:	none		
Aim (aims) of the subject:	Acquiring theoretical and practical knowledge on designing fairground and exhibition objects. Reasons for emergence of these objects are analyzed through historical overview, and their transformation and sustainability nowadays. Students are presented with the philosophy of construction of these objects in macro and micro surrounding, as well as their interactions with the constructed and natural environment. Students are also enabled to master the methodology of designing the objects if this kind in practice.		
Content:	1. Recommended readings and terminology. 2. Introduction to design of fairground exhibition complexes. 3. An overview of historical development with domestic and international examples. 4. An overview of historical development with analysis of domestic and international examples 5. The complex location selection criterion. 6. Urban dispositions of the complexes inside the micro and macro-location 7. Zoning of the complex and analysis of required primary, auxiliary and accompanying functions. 8. Internal and external traffic organization. 9. Functional organization, disposition, and required functions 10. Characteristic types and structural assemblies of an object. 11. The right structural material selection criterion 12. Equipment and treatment of space with an accent on efficiency, contemporary construction and safety. 13. Shaping the internal space, the exhibition space module – “the stand”.		

	14. Characteristic and representative examples 15. Field work (visit to the representative building)
Learning outcomes:	**Knowledge:** Acquiring specific knowledge of fairgrounds and exhibitions buildings their design. **Skills:** Mastering skills of practical application of specific knowledge of designing fairgrounds and exhibitions buildings. **Competences:** Designing complexes, i.e.. fairgrounds and exhibitions buildings in practice
Teaching methods:	**Ex-cathedra lectures;** **practical classes – project;** **visting representative building**
Assessment methods including grading structure [169]:	Partial exams, two during semester 16% + 16%, graphical assignment 64%, lecture activity and attendance 4% and / or integral/final exam 32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[170]:	Obligatory: 1. Hadrović Ahmet: ***Velike svjetske izložbe: arhitektura kao prethodnica budućnosti***, UNSA, Arhitektonski fakultet, Sarajevo, 2015 2. Marg, Volkwin: ***Neue Messe Leipzig / New Trade Fair Leipzig: von Gerkan, Marg und Partner 1992 - 1996***, 1996 3. Dančević, Desimir: ***Konstruktivni sistemi u visokogradnji***, Niš, Institut za dokumentaciju zaštite na radu, 1978; Additional: 1. Schulte, Karin: ***Trade Fair Design Annual 2007/2008 Messedesign Jahrbuch: International (Trade Fair Design Annual: International)***, 2008 2. Morgan, Conway Lloyd: ***Trade Fair Design Annual 2004/2005 / Messedesign Jahrbuch***

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	2004/2005: International, 2005 3. Sabine Marinescu, Janina Poesch: ***Trade Fair Design Annual 2008-2020, Messedesign Jahrbuch: International*** 4. Rile, Herman i dr.: ***Prostorne krovne konstrukcije***, Beograd, Građevinska knjiga, 1977;

Code: 01.03.17	**Title of the subject: TRAFFIC BUILDINGS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours: 60** **30 Lectures** **60 Exercises**	

Teaching staff	**Professors and teaching assistants affiliated to Department of design**
Prerequisites:	none
Aim (aims) of the subject:	The aim of the subject is to introduce students to this specific type of buildings.
Content:	1. Influence of traffic objects to the environment; 2. A historical overview of the development of busses and bus passenger terminals; 3. The basic parts of a bus terminal, its function and calculated dimensions; 4. Examples of representative bud terminals; 5. A historical overview of the development of railways; 6. A historical overview of the development of railway terminals; 7. Types of railway terminals and their position in the urban fabric; 8. The basic parts of a railway terminal, its function and calculated dimensions; 9. Examples of representative railway terminals; 10. A historical overview of aviation development; 11. Division of airports; 12. The basic parts of an airport terminal and its function; 13. Calculating dimensions of the basic parts of an airport terminal; 14. Examples of representative airport terminals; 15. Field work (a visit to a representative object).
Learning outcomes:	Knowledge: Acquiring specific knowledge of traffic buildings and their design. Skills: Mastering skills of practical application of specific knowledge of designing traffic building. Competences: Designing traffic buildings in practice
Teaching methods:	Ex-cathedra lectures; individual consultations, practical classes – graphical presentation.

Assessment methods including grading structure [171]:	Partial exams/presentations, two during semester 16% + 16%, 64% graphical assignment 64%, Lecture Activity and attendance 4% and/or final exam/final presentation (32% (For those who were not satisfied with the grades on partial exams during the semester). The final grade of the course is based on the lecture regularity of attendance, engagement on them, the quality of graphical assignment and the results of partial and / or integral/final exam. For the final grade to be positive, each exam segment must be evaluated positively.
Bibliography[172]:	Obligatory: none Additional: ***Bus stations:*** 1. Tomić, Milovan: ***Stacionarni caobraćaj***, Beograd, Saobraćajni fakultet u Beogradu, 1979; 2. Putnik, Nikola: ***Autobaze i autostanice***, Beograd, Saobraćajni fakultet Univerziteta u Beogradu, 1992; ***Railway stations:*** 1. Fejzić, Emir: ***Pojava i razvoj željeznice i željezničkih putničkih terminala***, Sarajevo/Beograd, University Press/Građevinska knjiga Beograd, 2011; 2. Fejzić, Emir: ***Suvremeni željeznički putnički terminali***, Sarajevo/Beograd, University Press/Građevinska knjiga Beograd, 2011; 3. Fejzić, Emir: ***Funkcioniranje i proračubn željezničkih putničkih terminala***, Sarajevo/Beograd, University Press/Građevinska knjiga Beograd, 2011; 4. Milošević, Božidar: ***Željezničke stanice i čvorovi***, Beograd, Saobraćajni fakultet Univerziteta u Beogradu, 1980; ***Railway stations in foreign languages:*** 1. Ferrarini, Alessia: ***Railway Stations***, Milano, Electa, 2005; 2. Parissien, Steven: ***Station to Station***, London, Phaidon - Reprinted in paperback, 2001; ***Airports:***

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	1. Fejzić, Emir: ***Civilni aerodrome i aerodromski putnički terminali,*** Sarajevo, Arhitektonski fakultet Univerziteta u Sarajevu, 2005; ***Airports in foreign languages:*** 1. Dempsey, Paul Stephen: ***Airport Planning and Development Handbook***, New York, McGraw-Hill. 2000.

Code: 01.04.39	**Title of the subject: TRANSFORMATION AND FUTURE ORGANISATION OF RURAL SETTLEMENTS**		
Cycle: 2nd	**Year of the study:** 2nd	**Semester: 3rd**	**Number of ECTS credits:** 2
Status: Elective		**Total number of hours:** 30 Lectures 15 Exercises 15	

Teaching staff	**Teachers and associates elected in the field to which the subject belongs** Field – Urbanism and spatial planning
Prerequisites:	None.
Aim (aims) of the subject:	Rural territory has been, theoretically and practically, significantly neglected in the field of planning and design. Planning instructions for future redistribution of rural settlements, which are the global problem in every organised country, are logical consequence of transformations in functional organisation of the state territory. Heterogeneity and multitude of rural settlements in B&H will be especially treated because of the need for development of a rational planning documents and the correct establishment of a system for its implementations.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Introduction to the general and specific issues related to rural spatial organisation, especially to the importance of organisation and design of non-urban territories; A designation of rural agglomeration types, purpose and functions of villages in the system of settlements; Elements of rural settlement design; The notion of the village, genesis, definition and historical development; Villages in BiH, their potentials for living and rationalisation of the settlement network; Indicators and criteria for elements of recognition and organisation of settlements and crofts; Sociological-functional and spatial-organisational characteristics of regional importance; Morphological and functional consequences of types of rural settlements; Traffic system, accessibility to higher-level settlements, influence to production and social-cultural life in the village; An overview of development of types of traditional village in BiH;
Learning outcomes:	Knowledge: Understanding the contemporary concept of spatial organization of the rural settlement; Skills: By using new functional elements, the ability to solve the spatial organization of a rural settlement and characteristic rural houses;

	Competences: Possibility to participate in development of spatial planning documents of rural settlements;
Teaching methods:	Theoretical part (lectures and individual consultations) and practical part (practical classes - analysis and functional determination of needs for rationalization of rural systems);
Assessment methods including grading structure [173]:	Individual work at practical classes, discussion upon handing in the assignment, final written exam for students who failed to collect the required minimum of points during classes.
Bibliography[174]:	Obligatory: Cvijić, J, Balkansko poluostrvo i južnoslovenske zemlje, Zavod za udžbenike i nastavna sredstva, Beograd, 1966 Hamidović, M, Gramatika toposa Bosne, Muzej grada Zenice, 2000 (str. 79-94) Hamidović, M, Modeli eksperimentalnih sela, Društvo arhitekata i urbanista Jugoslavije, Beograd, 1985 Hamidović, M, Rurizam, Separati, Arhitektonski fakultet Sarajevo, 1988 Marinović-Uzelac, A, Prostorno planiranje, Dom i svijet, Zagreb, 2001 (str. 411-428) Simonović, Đ, Uređenje seoskih naselja, Građevinska knjiga, Beograd, 1980 Studija .Transformacija, prostorna organizacija i uređenje ruralnih naselja u BiH, Institut za arhitekturu, urbanizam i prostorno planiranje Arhitektonskog fakulteta, Sarajevo, 1981 (Urednik i autor separatnih studija M. Hamidovi}) Trumić, A, Urbano selo., Raskršće, Svjetlost, Sarajevo, 1981 Additional: Posebna izdanja Glasnika Zemaljskog muzeja (G.Z.M.) u Sarajevu - Etnografija

[173] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Code: 01.06.24	**Title of the subject: HIGH-RISE BUILDINGS IN ARCHITECTURE**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits: 9**
Status: ELECTIVE		**Total number of hours: 90 (45+45)** Optionally elaborate the distribution of hours per type: Lectures Exercises Seminar Field work Laboratory exercises Praxis Concert activities …	

Teaching staff	Teachers and associates elected in the field/ Department of architectural construction and building technology /Department for construction systems / Department for architectural design
Prerequisites:	Exams completed in previous subjects listed in the department.
Aim (aims) of the subject:	Understanding the issues related to the construction of High rise buildings in architecture, paying attention to critical influences caused by horizontal forces of earthquakes and wind. Getting to know tall objects through all phases of design, planning and construction.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	A historical overview, High rise buildings in architecture development; chronology of structural growth; Influence of structural load to tall objects; principles of seismology; seismic loading; structural efficiency measures; structural shapes of high rise buildings; structural concepts; structural forms; tall objects' design in architecture; concepts and typology; materialisation; tall objects' construction technologies; inventive technologies of formwork and concrete laying – creeping formwork; examples of the constructed tall objects; comfort and safety of use of the objects from the aspect of built-in materials; Principles of construction site organisation for tall objects; facades in High rise buildings in architecture; facade materialisation; structural systems High rise buildings in architecture installation systems; tall objects' energy efficiency; reinforced concrete advantages; fire protection in tall objects; foundation work; foundation work – the ground-construction interaction.

Learning outcomes:	Knowledge: Through the teaching process and work on the subject, students will: adopt designing and planning principles for tall objects, as well as their application in individual projects – adopt modes of expression in civil engineering; develop interest and responsibility towards the profession scientifically approach the solving of tall objects in architecture; create a database for individual work in development of blueprints; Skills: ; get to know the High rise buildings in architecture as a whole and all its important parts; Competences: to develop independence in the assignment-solving process; adopt principles of solving tall objects as architectural constructions and gain an insight into their complexity at different concrete assignments.
Teaching methods:	Lectures: oral and presentational; conversational method, practical presentations, deliberations. Practical classes: presentations and consultations.
Assessment methods including grading structure [175]:	Students are assessed through a seminar assignment or preliminary design at a given topic. The preparation is conducted through lectures and practical classes, as well as on the basis of a literature list recommended by professors and assistants at the beginning of the teaching process.
Bibliography[176]:	Obligatory: Coull, A., Smith, Stafford, B. (Eds). (1997). *Tall Buildings.* London: Pergamon Press. Hrnjić, H., Čaušević, A., & Skoko, M. (2012). *Otpornost materijala.* Sarajevo: Arhitektonski fakultet. Lyn, T. Y., Stotesbury, S. (1994). *Structural Concepts and Systems for Architects and Engineers.* Hoboken, NJ: John Wiley. Lynn, S. B. (1996). *Advances in Tall Buildings.* Delhi: CBS Publishers and Distributors, Delhi. Taranath. B. S. (1998). *Structural Analysis and Design of Tall Buildings.* New York: Mc Graw Hill. Additional: Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

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Code: 01.03.59	Title of the subject: CULTURAL FACILITIES 2		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: Elective		**Total number of hours: 90** Lectures: 30 Exercises: 60	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:	-		
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and morphological character of theatres and sacral buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of theatres and sacral buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the theatres and sacral buildings of the average complexity.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of theatres and sacral buildings; 2. Contemporary principles of organizing theatres and sacral buildings; 3. Spatial-functional groups and spatial configuration of theatres and sacral buildings; 4. Urbanistic, architectural and ambient aspects of the planning of theatres and sacral buildings; 5. Architectural programming of theatres and sacral buildings; 6. Analysis of architectural types and functional-spatial units of theatres and sacral buildings.		
Learning outcomes:	**Knowledge:** programming and architectural design of theatres and sacral buildings. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the theatres and sacral buildings develop through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. Developing skills for presentation and communication of a project design solution. **Competences:** The student is able to create the conceptual architectural project of the theatre and sacral building of the average complexity, based on the integrated knowledge from several previous professional subjects,		

	simultaneously mastering the design conceptual and technical-methodological basics of architectural design.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [177]:	Students are assessed through successfully executed practical assignments (60% of the grade); (20% of the grade), Project design defense (20% of the grade).
Bibliography[178]:	Obligatory: Current professional and theoretical literature in the field of architecture of theatres and sacral buildings. Picard,Q., RIBA, The Architects Handbook, Blackwell, 2002; Neufert,E., Arhitects' Data, Blackwell Science, Third Edition, 2000 De Chiara, J., Crosbie J.M., Time-Saver Standards for Building Types, McGraw-Hill – Fourt Edition, 2001 Sshmolke, B., Construction and Design Manual Theaters and Concert Halls, DOM publishers, secondedition, 2011 Stegers, R., Sacred Buildings, Design Manuals, Birkhäuser, 2011 Additional: Durmišević,E., Pašić,A., Çolakoğlu, B., Dynamic Architecture, University of Twente, 2015 Recent Architectural Magazines, Books about Architecture, Urban planinng, Urban design and Landscape, Architectural Design Manuals and Monographs of Architects

[177] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[178] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

Code: 01.02.31	**Title of the subject: ARCHITECTURAL INTERVENTIONS OF CULTURAL HERITAGE OBJECTS AND ENSEMBLES**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 3
Status: ELECTIVE		**Total number of hours: 30** **Lectures 15** **Exercises 15**	
Teaching staff	**Teachers and associates elected at** Department for Theory and History of Architecture and Protection of Architectural Heritage		
Prerequisites:	-		
Aim (aims) of the subject:	The aim is to introduce students with real situations and issues of the contemporary design in a historical context, to analyse examples, observe materialization, the connection between the old and the new, as well as to examine contemporary theories in this field while working on an outline proposal for the current architectural task. Since the subject is elective, the programme is slightly changed every year to suit the content and the selected theme or location.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1.Introduction - overview of the issues and topics of the elective course2. Analysing, exploring and defining terms and environments3. Urban architectural context and design influencing elements;4. Critical and focal points of the site (with emphasis on the selected site)5. Architectural and urban dominance in spaceAnalysis of urban and architectural typology (with emphasis on the chosen site) consistency and continuity, discontinuity, urban form and urban process8.Metaphysical context / genius loci, zeitgeist. 9/10 Theoretical background - contemporary regionalism - Critical regionalism 11. Examples, case studies (positive and negative) 12./13.Project approaches (dialogue, opposition, provocation in space)14. Architectural interventions / design approach selection 15. Final lectures, review of the assignment		
Learning outcomes:	Knowledge: Knowledge of theoretical and practical approaches in the spatial articulation of new structures within the existing historical urban tissue.		

	Skills: Knowledge and skill of the elements that define the context / ambience, the skill of recognizing the syntax of space, and articulating contextual architectural response. Competencies: Enabling students to perceive and recognize the values of the historical and architectural context, and to adopt an argument-based approach to design in complex historical urban environments.
Teaching methods:	Interactive lectures supported by graphical presentations and the participation of students in discussions. Creating a conceptual design – the interpolation of a new structure into the existing historical tissue of a town.
Assessment methods including grading structure [179]:	Participation of students and attendance 20% (10 –20) of the grade; graphical assignment 80%. Graphic work evaluation structure (analysis 15 - 25 points, concept 15 -25 points, final graphic work and presentation of 15 -30 points).
Bibliography[180]:	Obligatory: /Additional: The bibliography is individual and changes according to the practical part of the assignment. Brent Brolin, C, Arhitektura u Kontekstu IRO Građevinska knjiga, Beograd , 1985 Finch, P, Learning form Longevity, Architectural Review,200 Finch, P, The Certainty of Change, Architectural Review, 2007 Finch, P, Spanning Cultural Difference, Architectural Review, 2007, članci Forty, A, Words and buildings – A Vocabulary of Modern Architecture, Thames and Hudson, London, 2012. Liane, L, and Tzonis, A, Why Critical Regionalism Today?" In Architecture + Urbanism, May 1990. Maroevic, I, Novo u starom (New in Old), Architectural Faculty in Zagreb,1992 Norberg-Schulz, C, Genius Loci: Towards a Phenomenology of Architecture. New York: Rizzoli, 1980 Petruccioli, A, After Amnesia: Learning from the Islamic Mediterranean Urban Fabric, ICAR, University of Virginia, 2007 Rossi, A, Arhitektura grada, Građevinska knjiga, Beograd,2008. Stan, A, Points and Lines“ Diagrams and Projects for the City, Princeton Architectural Press, 1999

[179] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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	Schmaling, S, Masked Nostalgia, Chic Regression, The Critical Reconstruction of Berlin, Harvard Design Magazine, Back issue 23, 2007 Spector, T, The Morals of Modernist Minimalism – A Provocation, Harvard Design Magazine, fall 2006/winter 2007

Code: 01.03.71	**Title of the subject: SPORT BUILDINGS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 3rd**	**Number of ECTS credits:** 6
Status: ELECTIVE		**Total number of hours: 90** **Lectures 30** **Exercises 90**	
Teaching staff	**Teachers and associates elected in the field to which the subject belongs – Architectural design**		
Prerequisites:			
Aim (aims) of the subject:	The objective of the course is to familiarize students with the historical, typological and morphological character of sports buildings. The implementation of the course is based on functional-organizational determinants and contemporary tendencies in the design of sports buildings. Lectures provide an expert methodology for the design of architectural conceptual solutions for the sports buildings of the average complexity.		
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	1. Historical development of sports buildings; 2. Contemporary principles of organizing sports disciplines; 3. Spatial-functional groups and spatial configuration of sports buildings; 4. Urbanistic, architectural and ambient aspects of the planning of sports buildings; 5. Architectural programming of sports buildings; 6. Analysis of architectural types and functional-spatial units of sports buildings.		
Learning outcomes:	**Knowledge:** programming and architectural design of sport buildings. Through lectures and exercises, the student will acquire knowledge about the methodology of designing spatial-functional groups by which the sport buildings develop through the context, form, function, technology and materialization. **Skills:** The integration of theoretical and practical knowledge through semestral work encourages individual approach to problem solving in each individual student, as well as the development, research and use of traditional and contemporary materials and technologies. Developing skills for presentation and communication of a project design		

	solution. **Competences:** The student is able to create the conceptual architectural project of the cultural building of the average complexity, based on the integrated knowledge from several previous professional subjects, simultaneously mastering the design conceptual and technical-methodological basics of architectural design.
Teaching methods:	Lectures – ex-cathedra / multimedia; In-semester engagement – individual assignments/supervised work; Work in architectural design studio with presentations and discussions regarding the development of architectural design concepts.
Assessment methods including grading structure [181]:	Students are assessed through successfully executed practical assignments (60% of the grade); Test, Presentation and project defense (40% of the grade);
Bibliography[182]:	Obligatory: Hofmeister, Sandra, editor, Sports Facilities: Leisure and Movement in Urban Space, Detail Translation edition, 2019 Geraint John, Rod Sheard: STADIA A DESIGN AND DEVELOPMENT GUIDE; Architectural press, 2001 Rod Sheard: SPORTS ARCHITECTURE; Spon press, London & NY, 2001 Additional: Picard, Quentin RIBA, The Architects Handbook, Blackwell, 2002; Ernest Neufert – Arhitects' Data, Blackwell Science – Third Edition, 2000

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SYLLABUS FOR THE SECOND YEAR, 4th SEMESTER

ELECTIVE COURSES IN 4th SEMESTER

Code of subject: 01.02.37	**Name of subject: DEFINING AMBIENTAL UNITS – THE AUSTRO-HUNGARIAN PERIOD IN SARAJEVO**		
Cycle : 2nd	**Year of study: 2nd**	**Semester: 4th**	**Number of ECTS credits:** 6
Status: ELECTIVE		**Total number of hours: 60** Optional distribution of hours by type: **Lectures 1** **exercises 1** **Field work 2**	
Participants	**¸Teachers and associates elected in the domain to which the subject belongs** Field of theory and history of architecture and preservation of cultural heritage		
Pre-requisite for enrollment:	-		
Goal (objectives) of the course:	Historical context: Defining the ambient units of the Arustro-Hungarian period. Theoretical context: In the form of a workshop / workshop, introduce students to the methodology of developing research and documentation material, which is used in practice as a basis for the development of plans, projects, and as guidelines for granting urban approvals and building permits. Practical context: The goal is to provide realistic insights about the space in which there are architectural values, properly valorize and through further construction preserves, and does not degrade.		
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	- Getting acquainted with the selected location - Analysis (research and documentation) of part of the environment - Methodological approach - research, analysis, valorization of areas with visible traces of the Austro-Hungarian period; - Getting to know the location on the ground - Recording (technical drawings and photo documentation) - Determining the cause of degradation; - Defining the level of intervention and determining the guidelines for the preservation and optimal		

	presentation and revitalization of such areas, all based on the methodology learned in previous years of studies; - Digitization of finalized documentation and creation database through their own recordings approved by teachers and associates.
Learning outcomes:	**Knowledge:** The layering of this elective gives students the opportunity to acquire knowledge related to working in ambient units, to adopt differences manifested through the appearance of a new civilization circle, to learn how to use the space and ambience parameter appropriately. **Skills:** The skills acquired so far through the acquisition of knowledge in the field of protection of the architectural heritage have the opportunity to test and apply on a given topic. The fieldwork planned in the coursework allows students to develop their skills of judging and correctly valorizing space. **Competences:** The synthesis of prior knowledge leads to the possibility and competence to deal with the protection of the architectural heritage. Students apply their knowledge of the environment in a new environment and use their competencies in the sublimation of all prior knowledge.
Methods of teaching:	Possibility of field teaching depending on subject matter. Individual work with students in individual project segments. Collective work on the development of complete documentation.
Assessment methods including grading structure [183]:	Exercises - semester assignment - 45-90% Activity - 0-10% Final exam - 55-100%
Literature[184]:	**Required:** Documentation of the Archives of the Commission for the Preservation of National Monuments, the Federal

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	Institute for the Protection of Monuments, the Cantonal Institute for the Protection of Monuments, the Historical Archive, the Archives of Bosnia and Herzegovina and other relevant institutions.Brock, Guiliani, Moisescu, Il centro antico di Capua, Marsilio Editore, Padova, 1972. Carbonarra, G., Iole Pietrafitta Franca, Dieci Tesi di Restauro (1970-1981), Universita degli studi di Roma "La Sapienza", Roma, 1986. Chabbouh Akšamija L., Tradicija između autentičnosti i falsifikata, Arhitektonski fakultet, Sarajevo, 2015. Krzović, I., Arhitektura BiH 1878-1918, Sarajevo, Umjetnička galerija BiH, 1987. Kurto, N., Arhitektura BiH, razvoj bosanskog sloga, Sarajevo, Međunarodni centar za mir, 1998. Marasović, T., Aktivni pristup graditeljskom nasljeđu, Sveučilište u Splitu, Split, 1985. Marasović, T., Zaštita graditeljskog nasljeđa, Društvo konzervatora Hrvatske, Zagreb, 1983. Sanković Simičić V., Revitalizacija graditeljske baštine, NNP naša riječ d.o.o., Sarajevo, 2000. Schuller, M., Building Archaeology, München, ICOMOS, 2002. Zevi, B., Znati gledati arhitekturu, Zagreb, Naklada Lukom, 2000. Zevi, L., Il Manuale del Resauro Architettonico, Mancosu editore, Roma, 2002. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.04.19	**Subject title: ECOLOGICAL CONSEQUENCES OF URBAN ORGANISATION AND A SUSTAINABLE URBAN DEVELOPMENT**		
Cycle: 2nd	**Year: 2nd**	**Semester: 4th**	**Number of credits:** **3**(according to ECTS)
Status: ELECTIVE		**Total hours: 15 (1/sem.)** Optional distributin of hours by type: **Lectures** Exercises **Seminar** **Field work** ...	

Teaching staff:	Teachers and associates engaged in the scientific field "Urbanism and Spatial planning"
Enrolment requirements:	-
Subject objective(s):	Developing a comprehensive and structural understanding for and enabling students to engage in practical application of the basic principles of bioclimatic urbanism as a multidisciplinary field, primarily aimed to shape the space as a place of harmony between the architectural volume and the spatial context in which it is formed.
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*	Relevant documents; Principles of harmonisation of natural and constructed environment; Sustainability components; A sustainable urban organisation concept; Elements of bioclimatic urbanism in the process of formation and development of cities; Intra-urban and extra-urban capacity of a sustainable city; City as an eco-system; Compact or dispersed city; Urban ecosystems I; Urban ecosystems II; Ecological principles of reconstruction of cities; The main factors of a sustainable bioclimatic urbanism I; The main factors of a sustainable bioclimatic urbanism II; Strategies of a sustainable bioclimatic urban development; Principles and methods of application.
Learning outcomes:	Knowledge: Students are expected to adopt certain knowledge, useful for understanding and an inventive application of principles, normative and standards of bioclimatic urbanism, for the purpose of achieving harmony between natural and constructed environment. Skills: Basic skills needed for work in multidisciplinary teams dealing with a sustainable approach to urban planning and design. Competencies: Collaborator, under guidance and supervision, on the development of spatial planning documents with a focus on sustainable development.
Teaching methods:	Presentation through inductive and deductive method of the basic principles of a sustainable bioclimatic urbanism for the purpose of achieving sustainable and ecologically responsible urban development.
Knowledge assessment methods with grading structure[185]:	Attendance at lectures 20% Test (integrated final exam) 80%

[185] **The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton**

Literature[186]:	Obligatory: • Mostafavi, M. With D. (2010) Lars Muller, co-published by Harvard University Graduate School of Design, Boston. USA • Dahlgren, S., Wamsler, C. (2009). Evaluation of the Development of the Sustainable City Approach. SIDA. Additional: • CEMAT. (2000). *Vodeći principi za održivi prostorni razvoj evropskog kontinenta*. (Adopted in Hanover). • European Commission. (1990). *Green Paper on the Urban Environment.* Brussels-Luxembourg. • European Commission. (1992). *Urbanisation and the Functions of Cities in the European Community*," Brussels-Luxembourg. • European Commission. (1994). *Europe 2000+. Co-operation for European Territorial Development.* Brussels-Luxembourg. • European Commission. (1996). *Social and Economic Inclusion Through Regional Development*. Brussels. • Hall, P. (2002). *Cities of Tomorrow. An Intellectual History of Urban Planning and Design Since 1880.* Hoboken, NJ: Wiley-Blackwell. • Jenks, M. (2000). *The Compact City, a Sustainable Urban Form?* London, New York: E & FN Spoon Press. • Keles R. (1989). Bios and the Urban Planning Dimensions for the Future. Biopolitics Athens, Greece. • Le Corbusier, C. J. (1974). Način razmišljanja o urbanizmu (T. Maksimović, Transl.). Belgrade: Građevinska knjiga. • *Living Together in Harmony with Nature – Architecture for a New Age*. Retrieved from: www.stratosphere.org • Lynch, K.(1991). *City Sense and City Design*. Cambridge, MA: MIT Press. • Matić, M. (1988). *Energija i arhitektura*. Zagreb: ITRO "Naprijed". • McHenry P (1998). *Adobe: A Present from the Past*. ICBO Code Central. • Neidhardt, V. (1997). *Čovjek u prostoru*. Zagreb: Školska knjiga. • Rapoport, A. (1977). *Human Aspects of Urban Form*. Oxford: Pergamon Press. • Rehnicer, R. (1991). *Osnovi antropoekologije.* Sarajevo: Mas/Art. • Simonis U., Hahn E. (1991). Ecological Urban Restructuring. Biopolitics , Athens, Greece. • *Sustainable and climate smart cities*. (2008). WB: Sustainable Development Department. • *Urban Identities and Regional Development*. (2003). Ministry of the Environment EU, UI&RD, Denmark. • Vresk, M. (2002). *Grad i urbanizacija*. Zagreb: Školska knjiga. • Wolf, P. (1974). *The Future of the City*. New York: Whitney Library of Design. • World Commission on Environment and Development (1987). *Our Common Future*. Oxford: Oxford University Press. • Yeang, K. (1995). *Desinging With Nature*: *The Ecological Basis for Architectural Design*. New York: Mcgraw-Hill.

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Code: 01.03.25	Title of the subject: HOUSE FORM AND CULTURE		
Cycle: 2nd	Year of the study: 2nd	Semester: 4th	Number of ECTS credits: 3
Status: ELECTIVE		Total number of hours: 15 Optionally elaborate the distribution of hours per type: Lectures Exercises Seminar Field work Laboratory exercises Praxis Concert activities …	

Teaching staff	**Teachers and associates elected in the field /Department of architectural design**
Prerequisites:	-
Aim (aims) of the subject:	To attract the interest of students towards the city as a cultural expression and the way of life, as well as towards the house as a typical construction, the form of which is a certain materialisation of the culture it was created in. If a house is to be observed in isolation, it would not be possible to estimate its complexity and subtle relations with the original matrix with which it forms an absolute spatial and hierarchical system. Because of that, it is necessary to present students with facts that indicate that changes in a culture, expressed through behaviour, influence the form of the house. In today's globalised world, cities lose identity, while houses are becoming identical around the world. In that respect, it is necessary to try to explain how form is achieved and what was the primary and the secondary influence to the house, as well as the motivation behind the perseverance of the form during a long time period. Elements of culturological context in preserving identity will also be discussed.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	This is an elective course in the ninth semester envisioned as a seminar with a limited number of students (15 – 20), aimed to introduce through lectures and presentation of seminar assignments house forms that are a direct expression of change of the value system, image, perception and the way of life. The seminar assignment consists of a theoretical/research activities and a minor project/practical assignment. In order to be able to understand culture and its relations with the house form, an intercultural comparison is applied, which enables students to notice constants, as well as changeable factors, and to evaluate the influence of cultural factors as form determinants. Influence of different variables to the creation of forms studied through history and different cultures, and a critical overview to the contemporary approach is also presented through adequate examples.
Learning outcomes:	Knowledge: Students adopt theoretical knowledge on the specificities, significance and influence of culture on the organization and design of housing and public spaces within the local and global spectrum.

	Skills: Students master presentation and communication skills, preparing, by planning and presenting their concepts, opinions and ideas. Competences: By successfully mastering the matter, students acquire the necessary general and professional competences related to house form and culture. General competences (instrumental, interpersonal, systematic) entail the ability to: analyse and synthesise, obtain and analyse information from different sources, understand diversity and multiculturalism, apply critical thinking, understand other countries' cultures and customs, act creatively and independently, understand social responsibility in one's own actions. Professional competences entail ability to: independently solve practical and theoretical problems in the field of housing, paying close attention to cultural context for the purpose of overcoming the practice resulting from a negative understanding of globalisation processes.
Teaching methods:	Lectures are obligatory and are organised as a combination of informative and practical teaching that entails a seminar assignment consisting of theoretical part and a project for which students pre-prepare (estimated work load is two hours a week). Students are obliged to actively participate in interactive lectures with a practical project section (minimum 80 % of the total number of the Contact hours). Scope of the seminar assignment with the project is dimensioned with regards to the class load a student is to use during the preparation of the seminar.
Assessment methods including grading structure [187]:	In the aforementioned forms of teaching, students are continuously assessed and final grades are obtained at the end of the semester, upon the presentation of the seminar consisting of theoretical and practical architectural part.
Bibliography[188]:	Obligatory: Grabrian, D., Neidhardt, J. (1957). Arhitektura Bosne i put u savremeno. Ljubljana: ČZP Ljudska pravica. Rapaport, A. (1969). House Form and Culture. Upper Saddle River, NJ: Prentice-Hall, Inc. Additional: Norberg-Schulz, C. (1990). Stanovanje: stanište, urbani prostor, kuća (O. M. N. Karapešić, Transl.). Belgrade: Građevinska knjiga. Rapaport, A. (1977). Human aspects Urban Form. Oxford: Pergamon Press. Rapaport, A. (2005). Culture, Architecture and Design. Chicago: Locke Science Publishing Company, Inc. Schoenauer, N. (2000). 6.000 Years of Housung. New York: W.W.W. Norton & Co.

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Code: 01.05.24	Title of the subject: CONCEPTUALISATION AND MATERIALISATION OF ARCHITECTURALLY DEFINED SPACE		
Cycle: 2nd	Year: 2nd	Semester: 4th	Number of ECTS credits: 3
Status: ELECTIVE		Total number of hours: 30 + 0 = 30 Lectures Exercises Field work	

Teaching staff	
Prerequisites:	
Aim (aims) of the subject:	Introducing students with new tendencies (approaching) the conceptualization and matriisation of architecturally defined space.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	According to the content of compulsory textbooks: Hadrović, A. (2016). *A new approach to the conceptualization and materialization of architecturally defined space*. Sarajevo: Faculty of Architecture of the University of Sarajevo. WEEKS 1-3: The fundamental social imputations: "Agenda 21, the Rio Declaration on Environment and Development", "Kyoto Protocol", "Energy Policy of the European Union", "EPBD Buildings Platform: Buildings Directive "," The Convention on Access to Information, Public Participation in Decision-Making and Acces to Justice in Environmental Matters, Aarhus, Denmark ". WEEKS 4-6: New Material-Response to New Architectural-Physical and Aesthetic Requirements. Traditional materials in new circuits. WEEKS 6-14: Examples of architectural ideas and realization in world practice (in the last decade). WEEK 15: Great World Exhibitions (EXPO). Exhibition pavilions, which with their conception and materialization, suggested the new possibilities of architecture.
Learning outcomes:	Knowledge: The student should become aware of the emergence of "new approaches to architecture" that have been a powerful zealot in its development, for the benefit of man. Skills: Being a student, recognizing his personality should, in solving every architectural task, be aware that architecture works for the needs of today, but also with the passion for the future, with the appreciation of proven values from the past. Competencies: Students should be able to see architecture as the unity of its artistic and exemplary-empirical components.
Teaching methods:	Lectures with video presentations. Interactive teaching.
Assessment methods including grading structure [189]:	Students work on seminars on the topic; the act is publicly defended in the form of a video presentation, and the hard-copy version of the work is submitted to the teacher. Lecture tracking 5% Individual (seminary) workshop 95%
Bibliography[190]:	Required:

[189] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

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Hadrović, A. (2016). A new approach to the conceptualization and materialization of architecturally defined space. Sarajevo: Faculty of Architecture of the University of Sarajevo.
Supplementary:
Balcomb, J. D. (1992). *Passive Solar Buildings*, Cambridge, MA: MIT Press.
Behling, S.& S. (1996). *Solar Power*, *The Evolution of Sustainable Architecture.* Munich, London, New York: Prestel.
Czalapaj, P. (2005). *Contemporary Architecture and the Digital Design Process*. Amsterdam, Boston, Sydney, Tokyo: Architectural Press.
Gustafson, H. (1992). *Building Materials Identified as Major Sources for Indoor Air Pollutants – A Critical Review of Case Studies*. Stockholm: Byggforskningsradet, Swedish Council for Building Research.
Hadrović, A. (2007). *Defining Architecrural Space on the Model of the Oriental Style City House in Bosnia and Herzegovina, Serbia, Montenegro, Kosovo and Macedonia*. North Charleston, SC: Booksurge, LCC.
Hadrović, A. (2008). *Bioclimatic Architecture, Searching for a Path to Heaven*. North Charleston, SC: Booksurge, LLC.
Hadrović, A. (2009). *Hadre, The Evolution of Bioclimatic Architecture.* North Charleston, SC: Booksurge, LLC.
Hadrović, A. (2010). *Arhitektonska fizika*, *drugo izdanje.* Sarajevo: Arhitektonski fakultet.
Hadrović, A. (2010). *Studije o arhitekturi i ogled o arhitekti*. Sarajevo: Arhitektonski fakultet. (An English language version also available, entitled: *Research study on Architecture and Overview of the Architect's Experience.*)
Hulstrom, L. (1989). *Solar Resources*. Cambridge, MA: MIT Press.
Larson, R., West, E. (1996). *Implementation of Solar Termal Technology*. Cambridge, MA: MIT Press.
Löf, G. (1992). *Active Solar Systems*. Cambridge, MA: MIT Press.
The Phaidon Atlas of Conteporary World Architecture, ISBN 0-7148-4312-1, Retrieved from: www.phaidon.com
Vale, B.& R. (2002). *The New Autonomus House, Design and Planing for Sustainability*. London: Thames & Hudson.
Vilson, A. (1998). *Green Development. Integrating Ecology and Real Estate*. New York, Toronto: Rocky Mountain Institute & John Wiley & Sons.
Wines, J. (2000). *Green Architecture*. Cologne, London, Madrid, New York, Paris, Tokyo: Taschen. Retrieved from: www.taschen.com
Winter, F. (1992). *Solar Collectors, Energy Storage, and Materials*. Cambridge, MA: MIT Press.
Yeang, K. (1999). *The Green Skyskraper, The Basis for Designing Sustainable Intesive Buildings*. Munich, London, New York: Prestel.

Code: 01.06.25	**Title of the subject: RECONSTRUCTION OF MASONRY STRUCTURES**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 4th**	**Number of ECTS credits: 9**
Status: Elective		**Total number of hours: 90 (45+45)** Optionally elaborate the distribution of hours per type: Lectures Exercises Seminar Field work Laboratory exercises Praxis Concert activities …	

Teaching staff	Teachers and associates elected in the field/ Department of architectural construction and building technology /Department for construction systems / Department for architectural design
Prerequisites:	Completed exams in subjects during previous years of studying at this department.
Aim (aims) of the subject:	To master methodology and skills of intervening on high rise walled objects.
Content: *(if necessary, the outline plan per week is determined by taking into account the specificity of organizational units)*	Masonry structures reconstruction methodology and classification, causes, consequences and detection of damage; Types and characteristics of materials used in load-bearing elements of masonry structures; Methods of detection and diagnostic of materials and constructions – destructive and non-destructive methods; Disposition and outline of an object – Recommendations and regulation requirements; Types of structures, materials, structures assemblies and elements in the late 19th and early 20th century; Causes of decay, floor structures and shallow wall arch ways and methods of interventions– the Prussian arch; Estimated bill of quantities, preparatory activities, technological processes, construction site management and technical protection measures for object reconstruction; Interventions in the reconstruction of masonry structures with traditional and contemporary materials; Possibilities of developing the existing outlines during object reconstruction; Application of architectural physics in object reconstruction; Reconstruction of installations; Fire protection in masonry structures; masonry structures reconstruction examples from practice.

Learning outcomes:	Knowledge: Through the teaching process, students will: adopt principles of intervention and their application in individual projects – adopt ways of expressing themselves in reconstruction of the masonry structure; develop interest and responsibility towards the profession; get acquainted with the masonry building as a whole, including all its important parts; scientifically approach the solving of the building construction; create a database for individual work at the development of blueprints; Skills: develop independence in solving problems; adopt principles of solving walled architectural constructions and acquire knowledge on their application at different concrete assignments. Competences: principles of intervention and their application in individual projects of reconstruction of the masonry structure.
Teaching methods:	Lectures: oral and presentational; conversational method, practical presentations, deliberations. Practical classes: presentations and consultations.
Assessment methods including grading structure [191]:	Students are graded through a seminar assignment or design on a given topic. The exam is prepared through content presented at lectures and practical classes, as well as through literature recommended by professors and associates at the beginning of the course.
Bibliography[192]:	Obligatory: Čaušević, A. (2004). *Konstruktivni aspekti sanacije i rekonstrukcije zidanih objekata visokogradnje.* (Master's thesis defended at the Faculty of Architecture, University of Sarajevo). Čaušević, A.; Rustempašić. N. (2014). *Rekonstrukcija zidanih objekata.* Sarajevo: Arhitektonski fakultet. Hrasnica, M. (2005). *Seizmička analiza zgrada.* Sarjevo: Univerzitet u Sarajevu. Hrnjić, H., Čaušević, A., & Skoko, M. (2012). *Otpornost materijala*. Sarajevo: Arhitektonski fakultet. Jure Radić et al. (2007). *Zidane konstrukcije*, priručnik. Zagreb: Hrvatska sveucilisna naklada. Sorić, Z. (1999*). Zidane konstrukcije I.* Zagreb: Hrvatski savez gradevinskih inzenjera.

[191] **The structure of the points and the criterion for each subject shall be determined by the councils of the organizational unit before the beginning of the academic year in which the teaching activity is performed in accordance with Article 64. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

[192] **The Senate of a higher education institution as an institution or a council of an organizational unit of a higher education institution as a public institution shall determine the obligatory and recommended textbooks and manuals as well as the other recommended literature used for preparation and assessment of the results of the examination by a special decision which is obliged to be published on its website before the beginning of the academic year in accordance with Article 56. Paragraph 6 of the Law on Higher Education of Canton Sarajevo.**

	Understanding Historic Building Conservation Edited by Michael Forsyth Department of Architecture and Civil Engineering,University of Bath, First published 2007 by Blackwell Publishing Ltd, ISBN: 9781405111720 Structural Aspects Of Building Conservations- Poul Beckmann and Robert Bowles, First published by McGraw-Hill International (UK) Limited 1995, Second edition 2004 Structures and construction in historic building conservation, Edited by Michael Forsyth,Department of Architecture and Civil Engineering,University of Bath First published 2007 by Blackwell Publishing Ltd ISBN: 9781405111713 Structural analysis of historical constructio-SAHC 2006, , Edited by P.Lourenco, C. Moddena, P. Rocca, First published 2006 by Mackmillan Publishing Ltd ISBN 10: Additional: Supplementary: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.04.28.	Subject title: SPATIAL MANAGEMENT		
Cycle: 2nd	**Year: 2nd**	**Semester: 4th**	**Number of credits: 3** (according to ECTS)
Status: ELECTIVE		**Total hours: 30** Lectures 30	
Teaching staff:	Teachers and associates elected in the field/ Department of urbanism and spatial planning		
Enrolment requirements:	None.		
Subject objective(s):	Introduction to urban economy; The notion of location and its "types"; The notion of rent and its elements; Conventions, directives and strategies that concern land policy and strategy of planning and spatial management; The current legislation; Kinds and categories of urban land according to significance and function; The main notions of rent and international relationships aiming to create optimal preconditions for construction, for the benefit of the entire community/construction and rational exploitation, as well as reuse of space and physical structures/urban recycling (city rent, natural resources rent, etc.); Economic aspects of forming and maintaining all constructions; Reflections of the process at a global plan: globalisation, metropolisation, decentralisation, local – global –integral.		
Content: *(if necessary, the weekly performance plan can be determined by considering the specificities of organizational units)*			
Learning outcomes:	Keeping in mind the extent to which planning is interdisciplinary, and the importance of findings in the field of urbo-economy in the process, students are expected to connect those findings in their work and to use them in certainprojects and assignments, especially within the engagement in the urban module –Master studies		
Teaching methods:	Presentation of the matter –an interactive course, raising the audience's interest through a criticalmanoeuvrein the planning –programming –implementation plane.		
Knowledge assessment methods with grading structure[193]:	Assessing the participation level within the interaction process; written exam.		

[193] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the

Literature[194]:	Bašić, A. (2000). Budućnost gradova –grad za život. Okoliš, 99. Committee on Special Development.(1999). ESDP –European Spatial Development Perspective (Agreed at the Informal Council of Ministers responsible for Spatial Planning in Potsdam).Luxembourg: Office for Official Publications of the European Communities. Douglass, M., Friedmann, J. (1998). Citiesfor Citizens -Planning and the Rise of Civil Society in a Global Age.London: Wiley-Academy. Istanbul + 5. (2001). Declaration on Cities and other Settlements in the New Millenium. New York:Habitat Agenda. Krešić, I. (1981). Prostorna ekonomija: osnove teorije, lokacije, razmještaja organizacije u prostoru.Zagreb:Školska knjiga. Mihaljević, G. (1992). Ekonomija i grad.Belgrade: CEP. Šoe, F.(1972). Urbanizam utopija i stvarnost.Belgrade: BIGZ. Stupar, A. (2009). Grad globalizacije –Izazovi, transformacije, simboli. Belgrade: ORION.ART. United Nations Economic Commission for Europe. (2009).Self-Made Cities. In Search of Sustainable Solutions for Informal Settlements in the United Nations Economic Commission for Europe Region. New York, Geneva: UnitedNations.Urbana pravila-okviri metropole, (Zagreb-seminari, 1996.) Vresk, M. (2002). Grad i urbanizacija.Zagreb: Školska knjiga. Vresk, M. (2002). Razvoj urbanih sistema u svijetu. Zagreb: Školska knjiga. Western Cape Provincial Development Council. (2000). Berlin Declaration on the Urban Future.Berlin: Western Cape Provincial Development Council. A summary of lectures prepared for students.

organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[194] **The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo**

VISUAL CULTURE

Code of subject: 01.02.36.	**Name of subject: VISUAL CULTURE**		
Cycle: 2nd	**Year: 2nd**	**Semester: 4th**	**Number of ETCS credits:** 3
Status: ELECTIVE		**Total number of hours: 30 (15+15)** Optional distribution of hours by type: **Lectures 15** **Exeminiation 15**	
Participants	**Teachers and associates elected in the domain to which the subject belongs** Field of theory and history of architecture and preservation of cultural heritage		
Pre-requisite for enrollment	-		
Goal (objectives) of the course:	Historical context: it is a science or a more precise interdisciplinary approach in which the study began relatively soon, so the historical context covers the latest phenomena and deals with them. Theoretical context: acquiring knowledge about aspects of a culture that rely on visual images. Inside contemporary culture, visual images are no longer linked exclusively to art history as an academic discipline that studies the history of fine art, but often overlap and can include: film, television, video games, comics, advertising, the Internet, and any other media code which is a crucial visual component. Practical context: Ability of students to notice certain phenomena and problems and to analyze them through the scientific process.		
Thematic units: *(if necessary, the performance plan per week is determined by talking into account the specificities of the organizational units)*	Why not art history? We are talking about visual culture; Visual perception; Role of aesthetics Critical look at certain phenomena Sociological aspect Psychological aspect Philosophy as a definition tool Exercises and consultations in the preparation of scientific work. The exercises contain the techniques and the methodology of writing a scientific article on the chosen topic. Students choose their own task.		
Learning outcomes:	**Knowledge:** Students gain knowledge in: sociology, psychology, philosophy, aesthetics, as well as art history		

	and criticism. These are all areas where they have already had background information, and through the visual culture are directed towards phenomena that are still looking for their place in general education as specific. **Skills:** Acquiring the writing skills of a research paper using siteze as a scientific method in the sublimation of multiple scientific fields and manipulation within interdisciplinary fields. Ability to manipulate enumerated knowledge in order to draw its own conclusions. **Competencies:** Since this is a relatively young science that has its roots in aesthetics and art history, students acquire competences that allow them to evaluate the value of the elements of space offered and question their own attitude, understanding that the visual culture significantly influences the individual and the group through their own a reflection of reality.
Methods of teaching:	Lectures with projections and comparison with different methods and techniques. Work under supervision - seminar work. Clausura as a cross section of work in terms of 6th and 12th week.
Knowledge testing methods with a rating structure[195]:	Seminar papers / presentations + 45-90% Activity - 0-10% Final exam - 45-90%
Literatura[196]:	**Required:** Berger, J., Ways of Seeing, British Broadcasting Corporation and Penguin Books, London,1972. Mulvey, L., Visual Pleasure and Narrative Cinema, 1975. Hall, S., The Hippies: An American Moment, Centre for Contemporary Cultural Studies, Birmingham, 1968. Hall, S., Encoding and Decoding in the Television Discourse, Centre for Contemporary Cultural Studies, Birmingham, 1973. Hall, S., Deviancy, Politics and the Media, Centre for Contemporary Cultural Studies, Birmingham. Lyotard, J.-F., TRANS/formers, Lapis Press, California, 1990.

[195] The structure of the points and the scoring criterion for each teaching subject is determined by the councils of the organizational unit before the beginning of the academic year in which teaching in the teaching subject is carried out in accordance with Article 64, paragraph 6 of the Law on Higher Education of the Sarajevo Canton

[196]The Senate of the higher education institution as the institution or council of the organizational unit of the higher education institution as a public institution determines the obligatory and recommended textbooks and manuals as well as other recommended literature on the basis of which it prepares and takes the exam with a special decision that it obligatory publishes on its website before the beginning of the academic year in in accordance with Article 56, paragraph 3 of the Law on Higher Education of Canton Sarajevo

	Lyotard, J.-F., The Assassination of Experience by Painting – Monory, Black Dog, London, 1998. Krauss, R., The Originality of the Avant-Garde and Other Modernist Myths., MIT Press, Cambridge, Massachusetts, 1985. Cartwright, L., Practices of Looking: An Introduction to Visual Cultur, Oxford University Press, 2001. **Supplementary**: In consultation with the subject professor individually in relation to the specificity of the topic of each individual candidate.

Code: 01.03.67	**Title of the subject: ARCHITECTURE OF COMMONS**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 4th**	**Number of ECTS credits: 6**
Status: Elective		Total number of hours 90 Lectures 30 Exercises 60	
Participants in the teaching	Teachers and associates elected in the domain to which the subject belongs: Architectural design		
Pre-requisite for enrollment:	None		
Goal (objectives) of the course:	The course aims are to enable students for critical spatial action within the contemporary political, ideological, artistic, and philosophical context of architecture and urbanism, at the level of micro-social form - community.		
Thematic units: (if necessary, the performance plan per week is determined by taking into account the specificities of the organizational units)	The concept of common good within social discourse occupies a position between the private and the public. In this sense, concepts and practices related to the notion of common goods represent an alternative by shifting power from the macro governance of the state and market to the community level. Even if the architecture of commons has different practices: from public spaces and housing, social and cultural services, to natural ecosystems and the digital sphere (Ostrom, E. & Hess, C, 2007), its resources are always managed by the community users. How can architects, landscape architects, urban planners under different tensions of the contemporary context, advance the design towards a regenerative and redistributive economy-based architecture of the commons?		

	The basic thematic unit is reform - what are the possibilities of spatial transformations to improve the conditions of the built context for different micro-social groups. The architectural implications of living together are manifold. From new forms of land ownership to new typologies of collective housing, from radical care to the circular economy, and from crowdsourcing to peer-to-peer production, the common good provides an opportunity to explore prevailing practices and stimulate radical imagination. Through a series of small and large exercises, students will confront and examine different socio-spatial problems to which they will respond using different media - text, drawings, models, photographs. The proposal of transformation does not have to be in the form of an "object"- all forms of material and immaterial action in space can be considered. Thematic units: 1. Politics and architectural design 2. Socially engaged architectural design 3. Critical review of the valorization of contemporary architecture - inclusion of pericentric value systems 4. Redefining the role of the architect in the contemporary social context concerning the users 5. Participation of users in the process of spatial action 6. Alternative methods of architectural education 7. Alternative movements in contemporary architecture 8. Design activism 9. Methods of architectural design to achieve management of resources by the community 10. Methods of architectural design using social resources 11. Mapping Controversy 12. Case studies
Learning outcomes:	After passing the exam, the student will be able to: 1. Critically analyze spatial interventions concerning the improvement of the existing context conditions; 2. Identifies different goals of spatial design concerning users and macro-social context; 3. Valorizes architectural interventions concerning the ultimate social impact; 4. Identifies appropriate design methods to improve the specific context. Knowledge: Critical observation of the values of contemporary architecture. Possibilities of achieving social transformation

	through spatial intervention by applying the values of the user. Skills: The use of different architectural design tools, protocols, virtual and physical spaces, materiality, aesthetics, form, heritage of the commons. Competences: Architectural design or moderation of the spatial action in the following variables: 1. autonomous spaces (in which the intention to survive as completely independent or parallel systems is clearly expressed); 2. experimental spaces (indicating the need to change the socio-political paradigm and physical space); 3. urban common goods (included in the formal system of urban policies using various mechanisms of ceding space, partnerships, etc.).
Methods of teaching:	Lectures, individual practical work, teamwork on the analytical part of the project, discussions, poster presentations, fieldwork.
Knowledge testing methods with assessment structure[197]:	1. Analysis of the existing context with all social, natural, and built elements with an assessment of the potential impact of the newly designed solution on users; (10%) 2. Synthesis of results of analysis and goals of spatial intervention in graphic parameters; (10%) 3. Identification of possible design methods, and their valorization concerning the existing context, then selection of the appropriate design method concerning the set goals of improving the context; (20%) 4. Development of a conceptual solution for spatial intervention; (40%) 5. Public presentation with a focus on the explanation and critical evaluation of the proposed solution; (10%) 6. Participation in the discussion on the assessment of the justification of the proposed spatial interventions. (10%)
Literature:	Required: • Alastair, Fuad-Luke. Design Activism. London: Earthscan, 2009. • Awan, Nishat; Tatjana Schneider; i Jeremy Till. Spatial Agency: Other Ways Of Doing Architecture, uredio Nishat Awan, Tatjana Schneider i Jeremy Till. London and New York: Routledge, 2011.

[197] **Struktura bodova i bodovni kriterij za svaki nastavni predmet utvrduje vijece organizacione jedinice prije pocetka studijske godine u kojoj se izvodi nastava iz nastavnog predmeta u skladu sa clanom 64. st.6 Zakona o visokom obrazovanju Kantona Sarajevo**

	• Hamdi, Nabeel. Housing Without Houses: Participation, Flexibility, Enablement. New York: Van Nostrand Reinhold, 1991. • Till, Jeremy; Peter Blundell Jones. Architecture and participation. New York: Spoon Press, 2005. • Yaneva, Albena. Mapping Controversies in Architecture. Burlington: Ashgate Publishing, 2012. • Kubey, Karen. Housing as intervention architecture towards social equity. Architectural Design. Volume 88. Supplementary: • Benjamin, Walter; Ernst Bloch; Bertolt Brecht; Georg Theodor Adorno. Aesthetics and Politics. London: Verso, 1977. • Ellin, Nan. Postmoderni urbanizam. Beograd: Orion Art, 2002. • Putnam, D.Robert. Kuglati sam, Slom i obnova američke zajednice. Novi Sad: Mediterran Publishing, 2008. • Cupers Kenny. Use Matters- An Alternative History of Architecture. New York: Routledge. 2013.

Code: 01.03.70	**Title of the subject: TOURISM AND HOSPITALITY FACILITIES WITHIN THE CONTEXT OF THE PROTECTION OF CULTURAL-HISTORICAL AND NATURAL HERITAGE**		
Cycle: 2nd	**Year of the study: 2nd**	**Semester: 4th**	**Number of ECTS credits: 6**
Status: Elective		Total number of hours 90 Lectures 30 Exercises 60	
Participants in the teaching	**Teachers and associates elected in the fields to which the subject belongs –** Department of Architectural Design and Department for Theory and History of Architecture and Protection of Cultural Heritage		
Pre-requisite for enrollment:	-		
Goal (objectives) of the course:	Historical, built, and natural heritage are under strong pressure from new construction for the needs of tourism and hospitality. To find a way for the sustainable development of such areas, the aim of the course is to help all students improve their existing knowledge and acquire new		

	knowledge in the following areas: • Design methodologies, theory, and history of architecture, and protection of architectural and natural heritage • Functional organization and interiors of tourism and hospitality facilities, such as boutique hotels, concept hotels, diffuse hotels, historical hotels, etc. • Graphic processing and presentation of architectural projects • Critical consideration of tourism and hospitality architecture in the context of protection and preservation of architectural heritage To develop skills, the course will focus on: • Graphic processing and presentation of architectural projects Public presentations of architectural projects, and critical consideration of tourism and hospitality architecture in the context of protection and preservation of architectural heritage.
Thematic units: (if necessary, the performance plan per week is determined by taking into account the specificities of the organizational units)	Thematic units deal with the question of: • Preservation of historically and naturally valuable entities that are under the pressure of new construction for the needs of tourism and hospitality. • Different types of hotels to be found within historically valuable architectural and natural units, including boutique hotels, concept hotels, diffuse hotels, and so on. • Approaches to the interior design of these buildings, which are an inseparable part of both the historical and architectural and/or natural, as well as the contemporary creative context.
Learning outcomes:	(Knowledge) After the course, students will: • Distinguish between different types of tourism and catering facilities that occur within historically valuable architectural and natural units, including boutique hotels, concept hotels, diffuse and historical hotels, etc. (Skills) Students will be able to: • Assess which type of hotel is appropriate to design in a given historical and/or naturally valuable environment, considering specific contextual factors. • Apply the principles of architectural design, interior design, as well as the doctrine of protection and preservation of architectural heritage to the design of tourism and hospitality facilities. • Apply theoretical knowledge in the field of tourism and catering and interior design to specific projects or assignments. • Publicly present architectural projects.

	• Critically analyze projects in the field of tourism and hospitality
Methods of teaching:	Attendance at lectures and exercises, as well as preparation for the exercises, is mandatory. Lectures are organized as a combination of informative and interactive teaching. Students must continuously prepare for lectures and work on the exercises themselves, including reading literature, analyzing examples from practice, and creating practical graphic work. During the semester, field teaching is organized, including tours of locations. Students will analyze examples from practice, work on a semester assignment that is partly supervised and partly independent and create practical graphic work. The teaching approach of teachers and associates with students is immediate and is done with each student individually and/or in groups. During the second half of the semester, two phases of practical work in the form of graphic work are taught and evaluated. Presentations of student works are organized during the last week of classes. Students are expected to actively participate in lectures, exercises, and discussions during presentations of student works.
Knowledge testing methods with assessment structure[198]:	Grading for the subject will follow this structure: • Graphical/analytical works during the semester and presentations - 45% • Activity - 10% • Final graphic work - 45% The criteria for evaluating graphic works will be as follows: • Correct application of theoretical knowledge in the fields of designing tourism and hospitality facilities, interior design, and the theory and history of architecture, as well as the protection of architectural and natural heritage - 60% of the graphic work grade. • Complexity of the task - 20% of the graphic work grade. Level of graphic presentation (use of appropriate graphic culture and techniques in practical work) - 20% of the graphic work grade.
Literature:	Obligatory: Frey, T., & Ronstedt, M. (2014). Hotelbauten: Handbuch und Planungshilfe. Dom Publishers. Lawson, F.L. (2007). Hotels & Resorts: Planning, Design and Refurbishment. Butterworth Architecture. Penner, R.H., Adams, L., & Rutes, W. (2012). Hotel Design,

[198] **Struktura bodova i bodovni kriterij za svaki nastavni predmet utvrduje vijece organizacione jedinice prije pocetka studijske godine u kojoj se izvodi nastava iz nastavnog predmeta u skladu sa clanom 64. st.6 Zakona o visokom obrazovanju Kantona Sarajevo**

	Planning and Development (2nd ed.). Routledge. Skorup, J. (2020). Atomizirani hotel. Zagreb: ArTresor naklada. Laws | Federal Ministry of Environment and Tourism - Bosnia and Herzegovina (fmoit.gov.ba) Tourism and hospitality (Categorization, Legal framework/BiH). Additional: Magazines dealing with tourism and hospitality issues: The Architectural Review - AR, L'Architecture d'Aujourd'hui - AA, Techniques et Architecture - TA, Deutsche BauZeitschrift – DBZ, Deutsche Bauzeitung - DB, ORIS, ČIP, itd. Relevantne arhitektonske web stranice: ArchDaily, Dezeen, DesignBoom, Architectural Digest, Architects' Journal, etc.