MATRIX of existing Master course (Georgian Technical University)

| **Name of compulsory chair** | **year** | **Semester** | **Number of ECTS** | **Number of elective chairs** | **List of available elective chairs** | **short description** | **relation between the contents and RETHINK’s theme** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Buildings Architecture** | | | | | | | |
|  | **1st year** | **1 semester** |  | | | | |
| -Business Communication (English)  -Business Communication (French)  -Business Communication (German) |  | | 5 |  |  |  |  |
| Management of Entrepreneurship and Innovation Technologies |  | | 5 |  |  |  |  |
| New housing structural architecture |  | | 5 |  |  | Habitation - Anthropogenic human living environment. Components of anthropogenic environment in the context of modern urban planning. Historical retrospective analysis of creating legal space of the architecture. Parallel analysis of Georgian and Western legal architecture spaces - the law on land, urban planning and cultural heritage. The history of establishing modern urban quarter and its role in creating the housing system. The logical harmony of the housing structure with the system of the old town. Identification of the new housing system and structure to the existing environment. A problem of social housing and its reflection in legal space and reality of the contemporary architecture. Reflection on the problem and the role of the new housing in architectural design. |  |
| Architectural Design -1 |  | | 5 |  |  | The goal of the discipline is to assist MA students in forming creative outlook towards the architectural design, method, reasoning, compositional skills and professional knowledge, to develop an understanding of architectural ideas, space-volumetric thinking and imagination. |  |
| Public buildings design theoretical foundations |  | | 5 |  |  | Understanding a system of public buildings in the historical context and contemporary perspective. The development of a human being as a collective creature and public buildings, as a formation of the statement area of this phenomenon.  Shaping and development of analytical skills of architectural thinking. Determining the role of climate and orography of objective reality and factors of spatial planning in the modern design. The place and role of the legal framework in architectural design.  The problem of symbiosis related to original and current reality of modern public buildings and formation of harmonious system in the context of prevalence of the humanitarian environment. |  |
| Architectural Design -2 |  | | 5 |  |  | The goal of the discipline is to assist MA students in forming creative outlook towards the architectural design, method, reasoning, compositional skills and professional knowledge, to develop an understanding of architectural ideas, space-volumetric thinking and imagination. |  |
| Total |  | | **30** |  |  |  |  |
|  | **1st year** | **2 semester** |  | | | | |
| Technical Translation Theory and Practice (English)  Technical Translation Theory and Practice (French)  Technical Translation Theory and Practice (German) |  | | 5 |  |  |  |  |
| 1. buildings reconstruction - restoration |  | | 5 |  |  | The lecture course shall deepen students’ knowledge about the historic town, the entire reconstruction-restoration process of individual monuments and groups of buildings. Since this process involves a lot of knowledge and skills of creative communication with a variety of specialists (art critics, archaeologists, engineers, and others.). To support graduate students in developing skills of gathering existing materials about the monument, as well as research skills (literary-informative, cartography-iconographic). To inform students about reasons of the disintegration and failure of monuments. |  |
| 1. Architectural constructions based on the modern technologies |  | |  |  | The training course is designed to introduce graduate students to modern achievements of architectural constructions and technology and assist them in the development of their practical skills in the practical design and implementation. |  |
| 1. Methodological fundamentals of architectural design |  | |  |  | Training course: "Architectural Design Methodology" is the basis of architectural design, which represents core activities for an architect; its aim is to master these fundamentals, which in turn determines the successful management of design and construction processes.  The aim of the course is to discuss, study and collate design methodologies existing in the field and select the priority option prevailing in the housing design area today, which in turn contributes to the achievement of desired results. |  |
| 1. sustainable development buildings architecture   (Architecture of Buildings for Sustainable Development) |  | |  |  | Introduce to students the importance of developing sustainable buildings, to teach basics of theories of climatology, insolation, heat technology, reporting methodology, climatic characteristics of the building design, which is directly related to the energy efficiency of buildings and interior climate comfort.  The student shall be able to analyse events and optimize them with architectural-planning methods, s/he shall be aware of ways to use solar and other renewable energy, energy impact of the nature on buildings and interiors. |  |
| **Graduate Research Project / Prospectus** |  | | 5 |  |  | Graduate Research |  |
|  |  | | 5 | 1. | Architectural theory and practice, research - generalization | The training course is the basis for developing skills for analytical thinking:  - To independently conduct scientific research related to various architecture problems.  - To follow footsteps of modern architecture processes. Knowledge of these processes is necessary for the development of professional intellect and practical work. |  |
|  |  | | 10 | 2. | Architectural Design -3 | The goal of the discipline is to assist MA students in forming creative outlook towards the architectural design, method, reasoning, compositional skills and professional knowledge, to develop an understanding of architectural ideas, space-volumetric thinking and imagination. |  |
|  |  | | 5 | 3. | Semiotics of culture and architectural practice | When determining the purpose of architectural semiotics, relationships among a symbol and a construction, as well as the problem of their significance (value) and importance is highlighted. Tourism and recreation spaces in most cases already offer something important and valuable (landscapes, monuments, ruins, etc.) as an initial condition of the context. In other cases this situation is artificially created. In these conditions, the emergence of construction takes place at the level of sign relationship, which requires development of abstraction skills. The goal of our subject could be also characterized as a movement from concrete to abstraction and back. |  |
|  |  | | 5 | 4. | Architectural Design | The aim of the discipline is to facilitate development of creative outlook, method, reasoning, compositional skills and professional knowledge related to architectural design among the graduate students, to develop understanding of architectural ideas, space-volumetric thinking and imagination. |  |
|  |  | | 5 | 5. | Architectural design and planning case organization 1 | Training course is the main profiling discipline. Its purpose is to direct the thinking of graduate students and to enable them to master the methods of architectural design with the use of skills of reflection of architectural features of the objects, as well as various tools and techniques of expression and to prepare the basis for preparing designs of simple, as well as complex and large-scale architectural objects and their complexes.  At the same time, studying design stages, which the project must undergo from the beginning to the end of the process, preparing the complete design documentation and afterwards, based on the working drawings - the realization of the project. |  |
|  |  | | 5 | 6. | Information provision of Architectural design | The goal of the course is to assist MA students in mastering proceedings of architectural design, starting from finding the object, maintaining good relations with customers, till the successful completion of the design process and its realization. Understanding all phases of the design process in all stages of design - consistent performance of related activities, communication with certification bodies and ensuring architectural supervision during the realization of the object. |  |
|  |  | | 5 | 7. | Architectural drawing (traditional and computer) 1 | The course is designed to develop skills for preparing conceptual and working documents with traditional and computer (2D and 3D) graphics, skills for gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
|  |  | | 5 | 8. | Design Methodology 1 | The training course is the main profiling discipline, its main purpose is to direct the thinking of graduate students so to enable them to master the methods of architectural design with the use of skills of reflection of architectural features of the objects, various tools and techniques of expression and to prepare the basis for preparing designs of simple, as well as complex and large-scale architectural objects and their complexes. At the same time, studying design stages, which the project must undergo from the beginning to the end of the process, preparing the complete design documentation and afterwards, based on the working drawings - the realization of the project. |  |
|  |  | | 5 | 9. | Conceptual and methodological foundations of composition | The goal of the course is deepen knowledge and experience of the MA students in the field of composition, which they acquired as the bachelor students, to develop creative thinking and taste, enlarge outlook and skills of spatial imagination, reveal creative potential of the graduate students and help them to find interesting solutions, realization of which is not difficult today due to the existence of new technologies. |  |
|  |  | | 5 | 10. | Computer Graphic 1 | The course is designed to develop skills for preparing conceptual and working documents with traditional and computer (2D and 3D) graphics, skills for gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
|  |  | | 5 | 11. | Conceptual and methodological foundations of composition | The goal of the course is deepen knowledge and experience of the MA students in the field of composition, which they acquired as the bachelor students, to develop creative thinking and taste, enlarge outlook and skills of spatial imagination, reveal creative potential of the graduate students and help them to find interesting solutions, realization of which is not difficult today due to the existence of new technologies. |  |
|  |  | | 3 | 12. | Architectural Bionics | To familiarize graduate students with the foundations of architectural bionics. The use of regulations forming the wildlife has reached new quality, acquired the name of architectural bionics and became one of the main directions of architectural hi-tech, but it is so specific that has become an independent branch of Architectural Science. After completing the course in Architectural Bionics, the student will be able to continue with academic and practical work in this very promising direction. |  |
|  |  | | 3 | 13. | Climate and Architecture | To familiarize graduate students with the basics of architectural climatology, climate elements, methods of forming comfortable microclimate, taking into account peculiarities of sustainable development of the climate in the design of buildings. |  |
|  |  | | 3 | 14. | Energy efficient technologies | The goal of the discipline is to give students a deeper understanding of energy efficient building technologies. |  |
|  |  | | 3 | 15. | Constructions of Sustainable Architecture | The training course is designed to introduce graduate students to achievements of modern architectural constructions and technology, develop their skills to use them in the practical design and implementation. |  |
|  |  | | 3 | 16. | Computer modeling of architectural solutions | The study course aims to create a project documentation by means of applied packages of modern computer technology. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **1 semester** |  |  |  |  |  |
| **Theoretical / experimental**  **Research / Colloquium** |  | | 10 |  |  | Research / Colloquium |  |
|  |  | | 5 | 1. | Theoretical Principles of Designing Industrial and Transport Enterprises (buildings) | The course is designed to introduce to graduate students theoretical aspects of design of industrial and transportation buildings-facilities based on the functional-technological, socio-economic, engineering-construction and architecture–creative complex of factors. To develop an ability to understand existing and potential problems of industrial and transportation architecture. |  |
|  |  | | 5 | 2. | Ecological Architecture | Activation of urbanization process, which at the modern stage has become a global phenomenon, highlighted an importance of taking environmental factors in the design of buildings and structures into account.  In the conditions of the modern urban environment, comfortable and well-equipped green spaces acquire great importance in the everyday life of a human being. The term "green building" or close to nature is now widely used in the modern architecture. In addition, each project is innovative because of the fact that an entirely new attitude towards the introduction of environmentally friendly technologies has formed. This field is much more profound and comprehensive than just an engineering solution to the collection-usage of alternative energy. This is a linkage between human and natural systems, the connection between the concepts of "man” and “nature".  This course is designed to introduce to graduate students experiments for searching architectural solutions in this direction that should ensure maintaining comfortable conditions for human life in buildings. This in its essence is the ecological architecture. |  |
|  |  | | 10 | 3. | Architectural Design -4 | The goal of the discipline is to assist MA students in forming creative outlook towards the architectural design, method, reasoning, compositional skills and professional knowledge, to develop an understanding of architectural ideas, space-volumetric thinking and imagination. |  |
|  |  | | 5 | 4. | Context in Architecture | The aim of the course is to discuss issues related to modern architecture, such as "an architectural context." The course is a theoretical basis for addressing practical issues of the planning process. |  |
|  |  | | 5 | 5. | Cultural Poetics and architectural practice | Together with the specific knowledge of tourism and leisure, our program introduces two additional concepts: "architect-artist" and his/her stage - "a culture territory". Furthermore, the goal of this addition is to return architecture expelled from the cultural space due to the pragmatism to the original bosom and restore broken links between traditions and innovations. |  |
|  |  | | 10 | 6. | Architectural Design 1 | The goal of the discipline is to assist MA students in forming creative outlook towards the architectural design, method, reasoning, compositional skills and professional knowledge, to develop an understanding of architectural ideas, space-volumetric thinking and imagination. |  |
|  |  | | 5 | 7. | Architectural design and planning case organization 2 | Training course is the main profiling discipline. Its purpose is to direct the thinking of graduate students and to enable them to master the methods of architectural design with the use of skills of reflection of architectural features of the objects, as well as various tools and techniques of expression and to prepare the basis for preparing designs of simple, as well as complex and large-scale architectural objects and their complexes.  At the same time, studying design stages, which the project must undergo from the beginning to the end of the process, preparing the complete design documentation and afterwards, based on the working drawings - the realization of the project. |  |
|  |  | | 5 | 8. | Architectural Structures and Materials | The goal of the training course is to comprehend architecture as constructive reality, which is based on richness and beauty of forms dictated by constructive structural mechanics.  In addition, the goal of the course is develop skills for correctly and purposefully selecting constructive structure in the design process of an architectural object, building, building or facility, as well as construction materials, which determines architectural-planning solutions and architectural-artistic expressiveness of the object. |  |
|  |  | | 5 | 9. | Architectural drawing (traditional and computer) 2 | The course is designed to develop skills for preparing conceptual and working documents with traditional and computer (2D and 3D) graphics, skills for gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
|  |  | | 5 | 10. | Social Research Methods and Analysis of public order | The aim of the training course is to equip young people with the knowledge necessary for solving, analysing, generalization any architectural problem and elaboration of recommendations. This is a stable and necessary precondition based on which real, healthy, harmonious and highly creative architectural environment can be developed. |  |
|  |  | | 5 | 11. | Design Methodology 2 | The training course is the main profiling discipline, its main purpose is to direct the thinking of graduate students so to enable them to master the methods of architectural design with the use of skills of reflection of architectural features of the objects, various tools and techniques of expression and to prepare the basis for preparing designs of simple, as well as complex and large-scale architectural objects and their complexes. At the same time, studying design stages, which the project must undergo from the beginning to the end of the process, preparing the complete design documentation and afterwards, based on the working drawings - the realization of the project. |  |
|  |  | | 5 | 12. | Conceptual and methodological foundations of shape formation | The goal of the study course is to assist graduate students to deeply comprehend geometrical forms and opportunities of their derivatives, to define characteristics of each of them, to feel their specifics and develop their ability-skills to use them in a variety of situations related to urban planning.  The learning process, when studying and creating plane, volumetric, volumetric-spatial, black and white compositions, relied and still, at the master's level relies on the following principles: From intuitive to intuitive awareness, from easy to difficult, a move from a "game" toward sensations and feelings. The ultimate goal of the course is to understand principles of shaping and composition and mastering laws of architectural harmony. |  |
|  |  | | 5 | 13. | Computer Graphics 2 | The course is designed to develop skills for preparing conceptual and working documents with traditional and computer (2D and 3D) graphics, skills for gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
|  |  | | 5 | 14. | Structures, construction principles and materials | The goal of the training course: "Architectural Structures and Materials Science” is to comprehend architecture as constructive reality, which is based on richness and beauty of forms dictated by constructive structural mechanics.  In addition, the goal of the course is develop skills for correctly and purposefully selecting constructive structure in the design process of an architectural object, building, building or facility, as well as construction materials, which determines architectural-planning solutions and architectural-artistic expressiveness of the object. |  |
|  |  | | 5 | 15. | Architectural Design of Sustainable Building | Formation of competent, creative, criticalally thinking master graduates of architecture able to pursue independent professional career with the use of principles of sustainable development in city planning and thus to contribute to the economic, social and cultural development of the current processes. S/he will also be able to pursue the doctoral study with an aim of improving his/her professional skills. |  |
|  |  | | 5 | 16. | Architectural Bionics (design) | Introduce to students the importance of developing sustainable buildings, to teach basics of theories of climatology, insolation, heat technology, reporting methodology, climatic characteristics of the building design, which is directly related to the energy efficiency of buildings and interior climate comfort.  The student shall be able to analyse events and optimize them with architectural-planning methods, s/he shall be aware of ways to use solar and other renewable energy, energy impact of the nature on buildings and interiors. |  |
|  |  | | 5 | 17. | Urban Basics of Sustainability | Formation of competent, creative, criticalally thinking master graduates of architecture able to pursue independent professional career with the use of principles of sustainable development in city planning and thus to contribute to the economic, social and cultural development of the current processes. S/he will also be able to pursue the doctoral study with an aim of improving his/her professional skills. |  |
|  |  | | 5 | 18. | computer modeling of Bionic forms | The goal the course: mastering opportunities of CAD systems for the purpose of modelling bionic forms and visualization. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **2 semester** |  |  |  |  |  |
| **Master thesis completion and defense** |  | | 30 |  |  | Master thesis completion and defense |  |
| **Total** |  | | **30** |  |  |  |  |
| **Total for Master course:** | **2 years** | **4 semesters** | **120** |  |  |  |  |

MATRIX of existing Master course (Georgian Technical University)

| **Name of compulsory chair** | **year** | **Semester** | **Number of ECTS** | **Number of elective chairs** | **List of available elective chairs** | **short description** | **relation between the contents and RETHINK’s theme** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Urban Planning** | | | | | | | |
|  | **1st year** | **1 semester** |  | | | | |
| -Business Communication (English)  -Business Communication (French)  -Business Communication (German) |  | | 5 |  |  |  |  |
| Management of Entrepreneurship and Innovation Technologies |  | | 5 |  |  |  |  |
| 1. Urban Ecology, Urban and Ecological Problems 2. Sustainable urban planning basics |  | | 5 |  |  | To study ecological problems of the city and development of urban planning analysis skills.  Formation of competent, creative, criticalally thinking master graduates of architecture able to pursue independent professional career with the use of principles of sustainable development in city planning and thus to contribute to the economic, social and cultural development of the current processes. S/he will also be able to pursue the doctoral study with an aim of improving his/her professional skills. |  |
| Formation of Urban Planning Structure |  | | 5 |  |  | The course is designed to introduce graduate students to the principles of city planning. |  |
| Theoretical Basics of Urban Design Reconstruction |  | | 5 |  |  | The course is designed to give graduate students an idea of urban reconstruction, as one of the major forms of city development, on such fundamental issues as the relations of urban reconstruction to the problems of cultural heritage protection. |  |
| Urban Climatology and Architectural Physics |  | | 5 |  |  | The course is designed to introduce to graduate students an understanding of the theories of urban climatology and architectural physics (architectural climatology, insolation, natural illumination, construction thermal technique, confronting noise, architectural acoustics), to teach undertaking the relevant reports. |  |
| Total |  | | **30** |  |  |  |  |
|  | **1st year** | **2 semester** |  | | | | |
| Technical Translation Theory and Practice (English)  Technical Translation Theory and Practice (French)  Technical Translation Theory and Practice (German) |  | | 5 |  |  |  |  |
| **Graduate Research Project / Prospectus** |  | | 5 |  |  | Graduate Research |  |
|  |  | | 5 | 1. | Urban ecology, theoretical and methodological foundations | To master theoretical-methodological issues of urban ecology. |  |
|  |  | | 5 | 2. | Computer modeling of the urban environment 1 | To develop abilities-skills to prepare a conceptual and working documentation of the city environment, project structure, visualization and presentation skills with the help of 2D and 3D computer graphics. To facilitate formation of highly qualified researchers-designers. |  |
|  |  | | 5 | 3. | The city's ecological environment design issues -1 | Graduate students learn practical application of theoretical knowledge |  |
|  |  | | 5 | 4. | Engineering arrangement of urban space and transport | Hands-on training course is designed to familiarize students on issues related to engineering organization of developing urban territories and important issues of the organization of transport network and traffic movement: study of vertical planning of city's territories, engineering organization, impact of local natural-climatic factors, etc.  An important part of the lecture-practical study course is related to problems in the organization of urban traffic and parking. The training course is designed to familiarise graduate students with urban planning-transportation systems, roads and intersections planning, an organization of transport and pedestrian movement and other specific issues.  Literature and visual materials from the experience of leading countries of the world, as well as slides and microfilms from the internet will be used.  Except the theoretical course, the study of the discipline envisages organization of hands-on classes with the aim of studying and reconstructing the functioning of the transport hubs of Tbilisi and other cities. The MA student shall perform and deliver the course work in the form of an abstract. |  |
|  |  | |  |  |  |  |  |
|  |  | | 5 | 5. | Social - economic fundamentals of urban development | Learning-practical course is designed to introduce to students the essence of city and urban space as a complex socio-economic organism and ways of interpretation of its current multilateral architectural and planning processes.  In particular, the focus is on the development of the city as a topology of urban space units, their development stages, modern research methods of urban sociology, economic foundations of using land and natural resources, economic indicators of the city's general plan and detailed projects, etc. |  |
|  |  | | 10 | 6. | Designing the city (small city) | Acquisition of urban design skills on an example of the city's residential district and the ability to graphically demonstrate the project proposal. |  |
|  |  | | 5 | 7. | Designing the city (Residential District) |  |  |
|  |  | | 5 | 8. | Computer modeling of urban spatial - planning organization | Mastering computer modelling of spatial-planning organization of the town with CAD systems. |  |
|  |  | | 5 | 9. | Transportation problems of urban reconstruction | The goal of the training lecture-practical course is to learn important issues related to reconstruction of the historical part of the cities, the transport network and the organization of the traffic movement. Transportation network form a structural part of the cities and their historic areas, so functioning of urban space greatly depends on its proper organization. The training course explores urban planning, planning of transportation systems, roads and streets, transportation and pedestrian movement, vehicles, and other specific issues. |  |
|  |  | | 5 | 10. | Urban and spatial reconstruction project of the city's historic quarter (secret reconstruction) | Relation of urban reconstruction, as one of the major forms of city development, to such fundamental issues as the problems of the protection of cultural heritage, a requirement to discuss the problem related to the protection of the heritage of the historic centre in the context of the urban development. |  |
|  |  | | 5 | 11. | Urban reconstruction computer software - 1 | To prepare the design documentation with the use of applied package of modern computer technology – on the bases of Autodesk and AutoCAD Architecture. |  |
|  |  | | 5 | 12. | The complex aspects of urban reconstruction of planning - functional, spatial – architectural, monument protection, socio - economic and transport - engineering infrastructure | To facilitate formation of a professional MA graduate of Urban Planning equipped with theoretical knowledge and practical skills of urban reconstruction based on strategic goals of urban development and "integrated conservation" principles of cultural heritage, as an important segment of city planning. |  |
|  |  | | 5 | 13. | Conceptual and methodological foundations of composition | The goal of the course is deepen knowledge and experience of the MA students in the field of composition, which they acquired as the bachelor students, to develop creative thinking and taste, enlarge outlook and skills of spatial imagination, reveal creative potential of the graduate students and help them to find interesting solutions, realization of which is not difficult today due to the existence of new technologies. |  |
|  |  | | 5 | 14. | Computer Graphic 1 | The course is designed to develop skills for preparing conceptual and working documents with traditional and computer (2D and 3D) graphics, skills for gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
|  |  | | 5 | 15. | Conceptual and methodological foundations of composition | The goal of the course is deepen knowledge and experience of the MA students in the field of composition, which they acquired as the bachelor students, to develop creative thinking and taste, enlarge outlook and skills of spatial imagination, reveal creative potential of the graduate students and help them to find interesting solutions, realization of which is not difficult today due to the existence of new technologies. |  |
|  |  | | 3 | 16. | Architectural Bionics | To familiarize graduate students with the foundations of architectural bionics. The use of regulations forming the wildlife has reached new quality, acquired the name of architectural bionics and became one of the main directions of architectural hi-tech, but it is so specific that has become an independent branch of Architectural Science. After completing the course in Architectural Bionics, the student will be able to continue with academic and practical work in this very promising direction. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **1 semester** |  |  |  |  |  |
| **Theoretical / experimental**  **Research / Colloquium** |  | | 10 |  |  | Research / Colloquium |  |
|  |  | | 5 | 1. | Social - ecological problems of City, the system of "people - natural environment" optimization methodology issues | Perfecting the knowledge received within the MA education program on important issues such as methodological issues of the optimization of the system of "people-the natural environment". |  |
|  |  | | 5 | 2. | Relations of the urban and natural landscapes territories in urban planning pocess | Environmental problems encountered in the process of urban planning of the territory and ways of their regulation. |  |
|  |  | | 5 | 3. | Computer modeling of the urban environment 2 | To develop abilities-skills to prepare a conceptual and working documentation of the city environment, project structure, visualization and presentation skills with the help of 2D and 3D computer graphics. To facilitate formation of highly qualified researchers-designers. |  |
|  |  | | 5 | 4. | The city's ecological environment design issues -2 | Graduate students learn practical application of theoretical knowledge |  |
|  |  | | 5 | 5. | Urban ecology | The course is designed to prepare qualified architect, who will have the proper knowledge of the city's ecology taking into account transport requirements |  |
|  |  | | 10 | 6. | Designing the city (city center) | Mastering urban design skills on an example of the reconstruction of the city centre and the ability to graphically demonstrate the design proposal |  |
|  |  | | 5 | 7. | City Design (historical city reconstruction) |  |  |
|  |  | | 5 | 8. | Tourism and resorts urban systems |  |  |
|  |  | | 10 | 9. | City's historical buildings urban reconstruction project | The course is designed to enable the MA graduate to design the urban reconstruction project of historical development in the urban heritage area of the city centre by taking scientific research methods, social-economic, transportation-environmental factors into account. |  |
|  |  | | 5 | 10. | Urban reconstruction computer software - 2 | To prepare the design documentation with the use of applied package of modern computer technology – on the bases of Autodesk and AutoCAD Architecture. |  |
|  |  | | 5 | 11. | Historic environment protection and comprehensive reconstruction principles | To facilitate formation of a professional MA graduate of Urban Planning equipped with theoretical knowledge and practical skills of urban reconstruction based on strategic goals of urban development and "integrated conservation" principles of cultural heritage, as an important segment of city planning. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **2 semester** |  |  |  |  |  |
| **Master thesis completion and defense** |  | | 30 |  |  | Master thesis completion and defense |  |
| **Total** |  | | **30** |  |  |  |  |
| **Total for Master course:** | **2 years** | **4 semesters** | **120** |  |  |  |  |
|  |  |  |  |  |  |  |  |

MATRIX of existing Master course (Georgian Technical University)

| **Name of compulsory chair** | **year** | **Semester** | **Number of ECTS** | **Number of elective chairs** | **List of available elective chairs** | **short description** | **relation between the contents and RETHINK’s theme** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Landscape architecture** | | | | | | | |
|  | **1st year** | **1 semester** |  | | | | |
| -Business Communication (English)  -Business Communication (French)  -Business Communication (German) |  | | 5 |  |  |  |  |
| 1. Management of Entrepreneurship and Innovation Technologies 2. Landscape computer modeling |  | | 5 |  |  |  |  |
| To develop abilities-skills to prepare a conceptual and working documentation of the landscape architecture, project structure, visualization and presentation skills with the help of 2D and 3D computer graphics. To facilitate formation of highly qualified researchers-designers. |  |
| Landscape Design Basics |  | | 5 |  |  | To teach MA students the basics of landscape design, landscape architecture development stages, styles, directions and trends in landscape design; to provide the students with foreign and domestic examples of landscape architecture. In addition, the course aims to enable the MA students to acquire an ability to use environmental-friendly approaches and spatial thinking skills in the context of broader ecological requirements. |  |
| 1. Urban Ecology, City and Environmental Problems  2. The history of landscape architecture - the basic styles and trends |  | | 5 |  |  | Studying ecological problems of the city and mastering urban planning analysis skills |  |
| To teach MA students the basics of landscape design, landscape architecture development stages, styles, directions and trends in landscape design; inform the students about foreign and domestic examples of landscape architecture. In addition, the course aims to enable the MA students to acquire an ability to use environmental-friendly approaches and spatial thinking skills in the context of broader ecological requirements. |  |
| 1. Town planning structure formation 2. Landscape design: designing square in urban environment |  | | 5 |  |  | The course is designed to introduce graduate students to the principles of town planning. |  |
| The discipline is designed to create conditions for training professional landscape architects having an ability of broad and creative thinking, who will be able to solve a variety of environmental problems. |  |
| 1. The theoretical basis of urban reconstruction 2. Landscape Design: Multifunctional (or monofunctional) City Park Design |  | | 5 |  |  | The course is designed to give graduate students an idea of urban reconstruction, as one of the major forms of city development, as well as to provide information on such fundamental issues as the relation of urban reconstruction to the problem of cultural heritage protection. |  |
| The discipline is designed to create conditions for training professional landscape architects having an ability of broad and creative thinking, who will be able to solve a variety of environmental problems. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **1st year** | **2 semester** |  | | | | |
| Technical Translation Theory and Practice (English)  Technical Translation Theory and Practice (French)  Technical Translation Theory and Practice (German) |  | | 5 |  |  |  |  |
| **Graduate Research Project / Prospectus** |  | | 5 |  |  | Graduate Research |  |
| The basic principles of the city's greenery |  | | 5 |  |  | To teach MA students the basics of landscape design, landscape architecture development stages, styles, directions and trends in landscape design; inform the students about foreign and domestic examples of landscape architecture. In addition, the course aims to enable the MA students to acquire an ability to use environmental-friendly approaches and spatial thinking skills in the context of broader ecological requirements. |  |
| Landscape design and decorating dendrology |  | | 5 |  |  | The course aims to teach students woody trees and shrubs. The graduate students will study the following issues within the framework of the course: an external structure of woody plants, specificities of biological ecological characteristics, decorative features, specificities of tree and shrub planting and propagation and their use in the greenery. |  |
| Decorative woody plant composition basics |  | | 5 |  |  | To study the usage of woody ornamental plants on the basis of landscape design theory. |  |
| Architecture - landscape organization of city center |  | | 5 |  |  | To teach MA students the basics of landscape design, landscape architecture development stages, styles, directions and trends in landscape design; inform the students about foreign and domestic examples of landscape architecture. In addition, the course aims to enable the MA students to acquire an ability to use environmental-friendly approaches and spatial thinking skills in the context of broader ecological requirements. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **1 semester** |  |  |  |  |  |
| **Theoretical / experimental**  **Research / Colloquium** |  | | 10 |  |  | Research / Colloquium |  |
| Landscape design: a historical garden reconstruction |  | | 5 |  |  | The discipline is designed to create conditions for training professional landscape architects having an ability of broad and creative thinking, who will be able to solve a variety of environmental problems. |  |
| Landscape design: architecture - landscape reconstruction of the central part of the city's |  | | 10 |  |  | The discipline is designed to create conditions for training professional landscape architects having an ability of broad and creative thinking, who will be able to solve a variety of environmental problems. |  |
| Plants and Phytodesign |  | | 5 |  |  | The course is designed to prepare graduate students in the relevant discipline, to introduce widely accepted practices, as well as new fashionable, open ground ornamental herbaceous plants - botanical characteristics, reproduction issues, agro-technical measures, the use of phyto-design etc. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **2 semester** |  |  |  |  |  |
| **Master thesis completion and defense** |  | | 30 |  |  | Master thesis completion and defense |  |
| **Total** |  | | **30** |  |  |  |  |
| **Total for Master course:** | **2 years** | **4 semesters** | **120** |  |  |  |  |

MATRIX of existing Master course (Georgian Technical University)

| **Name of compulsory chair** | **year** | **Semester** | **Number of ECTS** | **Number of elective chairs** | **List of available elective chairs** | **short description** | **relation between the contents and RETHINK’s theme** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Environmental Design** | | | | | | | |
|  | **1st year** | **1 semester** |  | | | | |
| -Business Communication (English)  -Business Communication (French)  -Business Communication (German) |  | | 5 |  |  |  |  |
| Management of Entrepreneurship and Innovation Technologies |  | | 5 |  |  |  |  |
| City coloristic |  | | 5 |  |  | Providing information about and analysing issues of city colouristic; development of professional skills necessary for the assessment of separate objects of the town (for reconstruction buildings, as well as for building in the process of reconstruction) or complexes colouristic;  Mastering techniques of integrating a new facility in the existing environment in terms of harmonious colouristic. |  |
| Design Planning Basics |  | | 5 |  |  | The purpose of the course is to study the design of the urban environment and principles, techniques and methods of planning of this environment. |  |
| Organization of urban space design |  | | 5 |  |  | The goal of the training course is to prepare graduate students in relevant disciplines, to introduce specifics of the organization of the design of urban environment, functional properties of its technical means - shapes, colors, textures and material types, application methods, advanced solution methods, their psycho-emotional impact on consumers and others.  To facilitate develop a professional vision on the basis of designing objects of varying complexity and functionality and to promote mastering skills for independently performing the design equipment of these elements. |  |
| Ergonomics |  | | 5 |  |  | The goal of the course is: To teach students the interior and environment design (furniture, household items, personal goods, electrical equipment, etc.) by taking ergonomic characteristics of people of different age and gender into account (body size, range of joint motion, muscle strength, psychology, physiology, hygiene etc.). |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **1st year** | **2 semester** |  | | | | |
| Technical Translation Theory and Practice (English)  Technical Translation Theory and Practice (French)  Technical Translation Theory and Practice (German) |  | | 5 |  |  |  |  |
| **Graduate Research Project / Prospectus** |  | | 5 |  |  | Graduate Research |  |
| Technical aesthetics and artistic construction |  | | 5 |  |  | To prepare the student in the appropriate discipline, to introduce the essence of artistic constructions, regularities of its development, design principles and methods, compliance of core requirements of technical aesthetics to creative principles of artistic construction, etc. To develop necessary skills for the creation of useful, comfortable and beautiful product with a new face and type. To develop skills necessary for perceiving useful and beautiful, utilitarian and aesthetic as a whole. |  |
| Design Planning Basics and    Methods 1 |  | | 6 |  |  | The goal of the course is study principles and techniques of design planning, as well as analysis, design, presentation and defence of designing objects and elements. |  |
| Small architectural forms |  | | 3 |  |  | The goal of the course is to prepare graduate students in the relevant discipline, to introduce the students to the basics of planning small architectural forms, functional characteristics of their technical means - shape, color, textures and material types, application methods, modern solution methods, their psycho-emotional impact on consumers, etc. |  |
| Artificial lighting of city and buildings |  | | 3 |  |  | To introduce MA degree-seeking architects to the principles and major issues of designing outdoor advertising. which in the future will help them to solve creative and professional objectives. |  |
| Outdoor Advertising Design |  | | 3 |  |  | To introduce MA degree-seeking architects to principles and major issues of designing outdoor advertising, which in the future will help them to solve creative and professional objectives. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **1 semester** |  |  |  |  |  |
| **Theoretical / experimental**  **Research / Colloquium** |  | | 10 |  |  | Research / Colloquium |  |
| Design Planning Basics and    Methods 2 |  | | 5 |  |  | The goal of the course is study principles and techniques of design planning, as well as analysis, design, presentation and defence of designing objects and elements. |  |
| Composition and coloristic in park and garden design |  | | 6 |  |  | The course is designed to teach to graduates students basic compositional and colouristic characteristics of preparing the park design and application forms, methods, places and means. To develop ability for its composite solution and correct selection-use according to the purpose of greenery object. |  |
| Art of Photography and Video |  | | 5 |  |  | The aim of the activity is the use of photo and video equipment in the work so that MA students are able: to obtain, analyze and use photos and video materials together with other materials of perspective work. To setup the camera in a way to place the object in the most sharp and profitable perspective Computer (digital) processing, adjustment, montage of footage. Correct determination of both natural and artificial lighting and creating the most advantageous footage. |  |
| 1. Amenity of territory 2. City Transport Design |  | | 4 |  |  | The course is designed to prepare graduate students in the relevant discipline, to introduce them to the basics of landscaping, functional properties of its technical means - shapes, colours, patterns and material types, application methods, advanced solution methods, their psycho-emotional impact on consumers and others. |  |
| The training course aims to prepare graduate students in the relevant discipline, to introduce them to the basics of public transport design, functional properties of its technical means - shapes, colours, textures and material types, application methods, advanced solution methods, their psycho-emotional impact on consumers and others.  To develop professional vision based on designing various transport and skills to independently undertake its design. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **2 semester** |  |  |  |  |  |
| **Master thesis completion and defense** |  | | 30 |  |  | Master thesis completion and defense |  |
| **Total** |  | | **30** |  |  |  |  |
| **Total for Master course:** | **2 years** | **4 semesters** | **120** |  |  |  |  |

MATRIX of existing Master course (Georgian Technical University)

| **Name of compulsory chair** | **year** | **Semester** | **Number of ECTS** | **Number of elective chairs** | **List of available elective chairs** | **short description** | **relation between the contents and RETHINK’s theme** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Interior Design** | | | | | | | |
|  | **1st year** | **1 semester** |  | | | | |
| -Business Communication (English)  -Business Communication (French)  -Business Communication (German) |  | | 5 |  |  |  |  |
| Management of Entrepreneurship and Innovation Technologies |  | | 5 |  |  |  |  |
| Interior main styles |  | | 5 |  |  | The course is designed to provide MA students with comprehensive knowledge on the main principles and techniques of planning solution and design of multifunctional interiors having complex planning structure with the purpose of performing designing in practice. |  |
| Interior art - decorative formation |  | | 5 |  |  | The course is designed to teach MA students basic methods, principles and tools of creative-decorating formation of complex interiors with the purpose of using them in designing process. |  |
| Interior Design |  | | 5 |  |  | The course is designed to provide MA students with comprehensive knowledge on main interior styles. Prerequisites for the establishment, development stages and features of different styles. To teach main techniques for creating interiors of different styles with the purpose of using them in designing process. |  |
| Ergonomics |  | | 5 |  |  | Explains the need and importance to consider and explores ergonomics when designing for comfortable human use. The goal is to study measures how to design better products that are more 'user-friendly'. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **1st year** | **2 semester** |  | | | | |
| Technical Translation Theory and Practice (English)  Technical Translation Theory and Practice (French)  Technical Translation Theory and Practice (German) |  | | 5 |  |  |  |  |
| **Graduate Research Project / Prospectus** |  | | 5 |  |  | Graduate Research |  |
| Modern styles formation |  | | 5 |  |  | The goal of the course is to study development stages, style features, formation and development history of civil, public or religious buildings having various functions. To prepare Masters of Architecture equipped with proper and thorough knowledge. |  |
| Residential buildings interior |  | | 5 |  |  | The goal of the course is enable MA students to thoroughly learn characteristics of architectural-planning, spatial and creative-decorative solutions of different types of residential interiors, for perfect architectural-planning and design-project performance of interiors of different complexity. Provide MA students with the theoretical knowledge necessary for independently performing practical activities and graphically demonstrating his/her project. |  |
| The automated formation of interior design documentation 1 |  | | 3 |  |  | With the help of 3D computer graphics preparing conceptual and working documents, gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
| Interior 3D modeling |  | | 4 |  |  | With the help of 3D computer graphics preparing conceptual and working documents, gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
| Color and texture in the interior |  | | 3 |  |  | Exploring theoretical issues related to colour solutions of interiors. Understanding the role and capabilities of the texture in the interior. Development of skills necessary for creating optimal colour climate for different interiors and selecting texture surfaces. |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **1 semester** |  |  |  |  |  |
| **Theoretical / experimental**  **Research / Colloquium** |  | | 10 |  |  | Research / Colloquium |  |
| Furniture basic styles |  | | 3 |  |  | The goal of the course is familiarize MA students with main furniture styles. Preconditions for their emergence, development stages, features, style forming techniques and means. |  |
| Public buildings interior |  | | 5 |  |  | The goal of the course is to teach MA students planning of public interiors having different purpose, complexity and architectural-planning and spatial solution and their creative-decorative solution, as well as perfect architectural-planning and design-project performance of different complexity. |  |
| Industrial buildings interior |  | | 5 |  |  | The goal of the course is to teach MA students the basic principles and characteristics of interior design for industrial buildings with the purpose of practicing these skills in the professional and creative career. |  |
| The automated formation of interior design documentation 2 |  | | 4 |  |  | With the help of 3D computer graphics preparing conceptual and working documents, gathering the project with the help of computer modelling, development of visualization and presentation skills. |  |
| Stained-glass window design |  | | 3 |  |  | The goal of the course is to teach students basic technologies of manufacturing different creative stained-glass windows (traditional stained-glass window, collage, pseudo-stained-glass window, acid processing of stained-glass window and Grisaille). |  |
| **Total** |  | | **30** |  |  |  |  |
|  | **2nd year** | **2 semester** |  |  |  |  |  |
| **Master thesis completion and defense** |  | | 30 |  |  | Master thesis completion and defense |  |
| **Total** |  | | **30** |  |  |  |  |
| **Total for Master course:** | **2 years** | **4 semesters** | **120** |  |  |  |  |