



1. Course Title

Territory Improvement and engineering development of area

(Teaching on Bachelor level, 2 Credits)

2. Learning Objectives

The goal of the course is to acquaint the students with the current problems of urban development, the main directions of their solution, the urban surroundings, as well as the interaction of the internal structural elements of cities, the external environment, the establishment of their harmonious interactions.

The issue of the course is to develop the following competencies (awareness) with the student and the learner should:

- Know the main ways of solving the current problems of improvement in the field of urban development;
- Know the details of the organization of the transport sector, the design of the components of the unified system of infrastructure, the knowledge of the relevant means used in the field of urban improvement;
- Apply the acquired knowledge in solving the problems of vertical leveling, horizontal-vertical leveling of urban areas, engineering arrangement and improvement problems;
- be able to detail each component of the transport according to the criteria; identify the problems encountered in the process of urban improvement and suggest different solutions.

The course discusses the problems of urban surroundings development field knowledge formation, the modern theory of urban improvement, which relate to the field of engineering improvement of lands and transport.

3. Intended Learning Outcomes

At the end of the course the student acquires:

- ✓ Knowledges around:
- relief, topography and its depiction,



- the solutions combination of vertical leveling problems, horizontal and vertical leveling of urban areas, engineering arrangement and improvement problems.
- the means of organizing drainage,
- the main parameters of the organization of urban vehicles, systems, as well as the traffic flows,
- the transport intersections,
- the transportation service in residential and industrial districts of the city.
- ✓ skills and abilities
- mastery of the details of the organization of the transport sector,
- skills to design the components of a unified system of infrastructure,
- ability to detail each component of transport communications according to criteria.

4. COURSE WORK (TERM PAPER)

The aim of the term paper is to acquaint students with the design of the vertical layout of a city street section. During the work, the problems of vertical planning of the city street and the volume of earthworks are determined, which are based on the preliminary data of the situation of plan, the cross section and longitudinal slopes of the street, the number of traffic lanes of the main and secondary streets.

The course work refers to the preparation of a vertical plan of a city street section. During the work, the problems of vertical planning of the city street and determination of the volume of earthworks are solved. The report explains the design norms of the city street, the calculations of the slopes of the precincts, the vertical planning of the precinct and the determination of the volume of earthworks. In particular, vertical planning, installation of project points, table of earthworks volumes are presented.

5. Suggested Background knowledge

Knowledge of the following subjects required to master the course.

1. Engineering geodesy,
2. Construction mechanics,
3. Fundamentals of urban development.



The student's ability to use maps is also required to complete the course project.

6. Teaching Methods

Teaching methods are chosen in alignment with this discipline objectives and students' needs. For this discipline is appropriate more teacher directed methods including the following elements: lecture showing by use of slide show presentations and other visible materials (videos, photos, documents, templates, etc.), worked examples, interactive lecture.

Lecture will help students organize extensive readings. Lectures should be crafted so that students are intentionally active as much as is reasonable. Lecture teaching should be mandatory combined with other teaching methods. Some topics of this discipline will require the online teaching by using videos for the modeling stage and discussion group.

Worked examples will provide an opportunity to demonstrate the real problem, ways of their solving, way of impart information. Students will actually work their way through the examples in order to strengthen their knowledge obtained from the lecture.

Interactive lecture assumes to use interactive techniques, particularly writing exercises, quick pairings or small group discussions, individual or collaborative problem solving, or drawing for understanding.

7. Assessment Methods

A course database has been compiled in the form of both documentary and computer form.

The course database includes:

- the training program available in the professional chair;
- studying and methodological materials related to the educational components of the course: the concept of the lectures, the studying and methodological instructions necessary for the organization and implementation of practical work, which are available in the professional chair;
- lists of main and auxiliary literature related to the educational components of the course, which is attached to the electronic versions of the literature and available in the chair;
- all mentioned stuffs are able to the students.

8. Required Texts and Reading

1. Кузнецова И.Н. Вертикальная планировка городских территорий. – Омск: СибАДИ, 2011. – 98 с.
2. Филимоненко Л.А. Инженерное благоустройство городских территорий и транспорт. – Челябинск: Изд-во ЮУрГУ, 2006. – 59 с.
3. Тугова Т.А. Инженерное благоустройство городских территорий и транспорт. Методическое пособие для студентов специальностей «Архитектура» и «Дизайн архитектурной среды». – Бишкек: Изд-во КРСУ, 2007. – 54 с.
4. Евтушенко М.Г., Гуревич Л.В., Шафран В.Л. Инженерная подготовка территорий населенных мест. М. 1982, - 207 с.
5. Бутягин В.А. Планировка и благоустройство городов. М. 1974, - 352 с.
6. Гохман В.А., Визгалов В.М., Поляков М.П. Пересечения и примыкания автомобильных дорог. М. 1989.



7. СНиП 2.07.01-89*. Планировка и застройка городских и сельских поселений. М. 2005.
8. Руководство по проектированию городских дорог и улиц. М.1980.