

**Course/module description** (*Critical thinking and research– Критическое мышление и исследования*)

**Course provider (institution):** Kyrgyz State Technical University named after I.Razzakov (KSTU), Department of Production and expertise of building materials, products and constructions.

**Course title:** Critical thinking and research (БД.1.В.2.)

**Target group:** PhD Students (620100 – Geodesy and Remote Sensing Direction. Geodesy and Geoinformation Technologies Program)

**Type (compulsory/optional):** optional

**Number of ECTS credits allocated (if applicable); estimated workload:** 5 ECTS (150 academic hours)

**Mode of delivery (face-to-face/ distance learning etc.); number of contact hours:**

48 class hours (16 - lectures, 32 – practical), 102 hours for the self study

**Language of instruction:** Kyrgyz/Russian/ English

**Prerequisites and co-requisites (if applicable):** Before beginning the study, the applicant must have mastered courses in logic, theory and practice of argumentation, and the basics of research practice., Knowledge of English for reading literature

**Course aims:** Familiarization of applicants with the forms and techniques of rational cognition, creation of a general idea of logical methods and approaches used in the field of their professional activity, formation of practical skills of rational and effective thinking.

**Learning outcomes:** After taking this course, the students should:

1. formation of rational and systematic thinking, construction of logically correct and convincing arguments, as well as logical analysis of other people's reasoning and statements;
2. development of critical analysis, allowing to freely navigate in information flows, distinguish information from misinformation, organize and systematize information;
3. development of lateral thinking skills, allowing to recognize non-obvious problems and find non-standard ways to solve them;
4. developing skills of working with texts, critical reading, oral and written speech, analyzing complex texts and correctly organizing one's own thoughts in oral and written form, public speaking;

**Course content:**

1. Introduction: why think critically? Critical thinking: goals, features, main characteristics
2. Critical analysis of cognition. Cognition, its types and levels. Knowledge as true informed opinion
3. Critical analysis of argumentation. Argumentation, its goals and subjects. Composition and structure of argumentation.
4. Language as a sign system. Natural and artificial languages, their cognitive and communicative characteristics.
5. Concepts, categories and operations with them. Concept as a form of thought. Content and scope of concepts.
6. Scientific method. The main features of scientific hypotheses.
7. Logical foundations of thinking. Basic logical concepts: concept, judgment, theory.
8. Logical foundations of critical thinking.

**Recommended or required reading and other learning resources/tools:**

1. Lecture Materials
2. Normative documents and regulations.
3. The Power Point lecture slides are available for download as PDF files at the course website.
4. Electronic resources on the lecture topics are available at the course website.
5. The class notes, latest journal articles and references related the course topics will be referred to and/or distributed during the lectures.
6. Text and Reference Books

**Recommended or required reading and other learning resources/tools:**

- forms: online, offline, hybrid

- types: lectures, practical classes, case studies, essays, written exam.
- methods: immersion method, independent work of doctoral students, individual assignment on the thesis topic, etc.

**Required literature:**

1. Халперн Дайана. Психология критического мышления. СПб.: Питер, 2000.
2. Академическое письмо. От исследования к тексту / Под редакцией Ю. М. Кувшинской. М.: Юрайт, 2019.
3. Лоу С. Философский тренинг. Руководство для начинающих. М.: АСТ, 2007.
4. Noel Moore, Richard Parker. Critical Thinking. NY, 2009.

**Additional literature:**

1. Бочаров В.А., Маркин В.И. Основы логики. М., 2009.
2. Войшвилло Е.К., Дегтярев М.Г. Логика: Учебник для вузов. М.: Владос, 2004.
3. Короткина И. Б. Академическое письмо: процесс, продукт и практика Учебное пособие для вузов. М.: Юрайт, 2015.

**Planned learning activities and teaching methods:**

1. Regular lectures;
2. Practicals and seminars;
3. Independent work on the research topic.
4. Regular consultation and discussion of independent work;

**Assessment methods and criteria:**

1. Practice assignments (40%).
2. Individual assignments (10 %).
3. Activity and participation in discussions (10 %).
4. Final exam (40 %).

**Grading system:** Five-point academic grading system, where 5 - "Excellent" and 2 - "Unsatisfactory" (Grades: A, B, C, F)

**Additional information:** Course instructor – Dr. Ainura Isaeva.

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