

SUMMARY OF DISCIPLINE

1. **Discipline:** Bases of designing of factories and equipment technology of refractory non-metal and silicate materials

2. Conventional designation (code) in education plans M2.B.1.5.3

3. **Direction 18.03.01:** "Chemical Technology"

4. Specialization "Chemical technology of refractory non-metal and silicate materials"

5. **Qualifications (degree)** Bachelor

6. **Provides department** Department of Silicate and Nanomaterials Technology

7. **Coordinator:** Ph.D. Associate Professor Mitina Natalia Aleksandrovna, E-mail: mitinana@tpu.ru

8. **Learning outcomes:**

1. To apply theoretical knowledge of physics and chemistry of refractory non-metal and silicate materials in the study and development of technological processes of creation of high-performance materials and products from ceramics, binders, glass, glass ceramics and composites based on them.
2. Independently design a process for producing technology of refractory non-metal and silicate materials, choose the rational production of the specified product from the scheme, to assess the efficiency of production.
3. Implement, operate and maintain the modern high-tech equipment in the manufacture of materials and articles made of ceramics, glass and binders.

9. **Contents:**

Module 1: Introduction. Requirements for equipment for the production of binders, ceramics and glass.

Module 2: Equipment for the extraction of raw material and his transport from the quarry.

Module 3: The equipment for crushing materials variety of machines, basic parameters and features of operation

Module 4: Methods of separation of materials. Basics of the theory of separation. Equipment for the separation of materials.

Module 5: Equipment for fine grinding, classification of materials, variety of machines, their design and operating features

Module 6: Equipment for the mixing and dosing of materials.

Module 7: Equipment for dust removal and transportation

Module 8: Composition and appointment of the project documentation, the design stage.

10. **Semester:** 8rd

11. **Prerequisites:** Б 3.Б 4 Processes and devices of chemical technology, Б 3.Б 2 Applied mechanics, Б 3.Б 1 Engineering graphics

12. **Credit cost of discipline:** 4 credits

13. **Type of intermediate certification:** exam, grading test

Teacher Mitina N.A.

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