

REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATIONS
FERGANA STATE TECHNICAL UNIVERSITY

Production in the output technological complexes

MODULE HANDBOOK

Field of knowledge :	700000	- Engineering, construction and construction industries
Educational Field:	730,000	- Architecture and construction
Education program :	60730300	- Civil Engineering

Module title	Production in the output technological complexes
Code (if available)	TCP43
Semester(s) of module teaching	4
Responsible for the module	<i>Sadullayev Hamidullah Mansurovich Technological cars and equipment department , associate professor Mamarizayev Ilhomjon Mahmudjon son Technological cars and equipment department , assistant</i>
Language of instruction	<i>Uzbek , English</i>
Connection to the curriculum	<i>Elective</i>
Teaching methods	<i>lecture , practical training , independent education .</i>
Study load (including classroom and independent study hours)	<i>total hours : 90 hours Auditorium Hours : 34 hours Lecture – 14 hours , practical training – 20 hours , independent 56 hours of training .</i>
Credit units	3
Required and recommended prior knowledge for studying the module	<i>Physics , Higher Mathematics , Heat technique</i>
Module objectives/intended learning outcomes	The purpose of the module: to introduce students to the structure and principles of operation of technological complexes, machines and devices used in the production of various chemical and building materials, to teach the basics of calculating common models. To teach students the theory of operation, types and structure of technological complexes, machines and equipment used in the production of various materials, as well as the methods of selecting and calculating the most suitable ones for certain conditions, and their effective use. The following requirements are imposed on students' knowledge, skills, and qualifications in science. Student: • Must know the general structure of machines used in the main technological complex, machine details, special parts, operating principles of mechanisms and devices, and areas of application. • calculation of the main indicators of student technological complexes; comparison of work productivity, technical and economic indicators; • Must have the skills to select the least expensive machines and mechanisms for construction and installation work; and must have the skills to deploy machines when preparing projects for the implementation of complex works. • Technical, economic and constructive analysis of the machines being manufactured and used by the student; their effective use in specific construction and installation conditions; • Determine the rational performance and operating modes of construction machines; use complex machines in conjunction with various loading and unloading machines; must have the skills to design a system of construction and installation machinery

Content	Module 1. Production in the output technological complexes to science entrance 1.1 . Science purpose and tasks. 1.2 . In Uzbekistan chemical road with cultivated materials and them in receiving applicable cars and equipment. 1.3.Current time under construction of cement importance. 1.4 . Cement working release methods: wet, dry and half dry methods technological schemes. Module 2. Cement clinker burn basics 2.1Cement clinker incinerator processes. 2.2Wet method worker complex oven aggregates. 2.3Dry method worker complex oven aggregates. 2.4Wet method dry to the method transfer problems. 2.5Clinker burner ovens classification. Module 3. Circulation ovens main parts structure 3.1Pech body , bandages and support rollers , hydraulic poles . 3.2Rotary kilns proceedings . 3.3 Collected dust to the oven return devices . 3.4Furnace tips compaction methods and equipment . Module 4. Circulation of the oven main indicators calculation 4.1 Furnace efficiency calculation. 4.2Turning the oven on being spent power calculation. Module 5. Circulation oven parts mechanic to strength calculation 5.1Furnace body impact provider forces determination and accounting scheme to compile. 5.2 Oven in the body voltages to determine. 5.3 Oven bandages to strength calculation 5.4Support rollers to strength calculation Module 6. Circulation of ovens internal and external heat exchangers 6.1Internal heat switches: chains, single installed heat exchangers. 6.2External heat exchangers: sludge concentrator, conveyor calcinator, cyclone heat exchangers. Module 7. Clinker refrigerators 7.1Recuperator type refrigerator : structure and work basics . 7.2Fridge- mounted refrigerator structure and work basics. 7.3 Refrigerators with grilles calculation basics. 7.4Cooling efficiency calculation. Refrigerator the procedure power calculation
Forms of assessment	oral, presentation, written work, practical assignments, and final exams.
Requirements for study and assessment	To successfully complete the module, the student must attend classes and achieve the minimum scores set in the current, midterm, and final assessments.

Bibliography	9. PhHip AAlsop , PhD, The Cement Plant Operations Handbook for Dry-Process Plants Seventh Edition January 2019, 287 p 10. Sadullayev HM, Alimatov BA, Ishkal in the output technological complexes , textbook , Fergana , “ Classik , 2020, 260 p. 11. Sadullayev XM, Sulaymonov A. Specialization entrance . Tashkent, “Navruz” -2019 12. Sadullayev HM , Alizafarov BA, Chemistry industry and construction materials working in the output modern technological lines lectures course Fergana , 2022, 64 p. 13. Sadullayev XM, Alimatov BA Ishlab in the output technological complexes . Fergana , “ Classic ” – 2020, 225 p. 14. Sadullayev HM, and Others , Manufacturing in the output technological complexes UMK 2022, 199 p.
Reviewers	Tojiev Rasuljon Jumaboyevich Technological cars and equipment department , professor