

Technology of machine maintenance and repair (IVth Year of study, VIIth Semester)

Credit value (ECTS) 5

Course category

Specialty (Imposed)

Course holder:

Lecturer Dr. Constantin CHIRILĂ

Discipline objectives (course and practical works)

During the course the students will acquire the theoretical knowledge related to the maintenance and repair of agricultural machines and those of the food industry.

At the practical works, the students acquire the practical knowledge related to the maintenance and repair of the agricultural machines and those of the food industry;

Contents (syllabus)

Course (chapters/subchapters)
CHAPTER. 1 Basic notions of repair and reliability agricultural machinery
Generalities
Structura sistemului de intretineri tehnice, revizii și reparații
Structure of the system of technical maintenance, overhauls and repairs
CHAPTER. 2 Notions of tribology
The friction
Lubricants
CHAPTER 3 The Wearing of parts
Generalities
The Normal wear
Criteria for setting wear limits
The Weares and wear limit on bearings operating at constant load
Permissible ovalization in bearings
Study of the wearing of the working organs of agricultural machines
wear and tear and obsolescence at machines
CHAPTER 4 Methods for reconditioning parts
Generalities
Reconditioning of the pieces to the original dimensions
Reconditioning of parts at stages of repair
Reconditioning of parts by using wear compensators
Reconditioning parts by replacing at part of the part
Methods of reestablishment the adjustments in the joints
CHAPTER 5 The Diagnosis of tractors
Generalities
Status parameters; structural parameters; Diagnostic parameters
Classification of the technical state parameters

General parameters (global); symptom of the Diagnosis
The objectives of the technical diagnosis of tractors; The stages of the technical diagnosis process
Classification of diagnosis methods and means
Global diagnosis of tractors
Technical diagnosis of tractor engines
Diagnosis and maintenance of engine mechanisms and systems
Diagnosis and maintenance of the rolling system of wheel tractors
Diagnosis and maintenance of steering mechanisms
Diagnosis and maintenance of the hydraulic systems of the suspension mechanisms
Diagnosis and maintenance of the electrical installation

Practical works
Work safety rules
General notions regarding the proper functioning of agricultural machinery and those of the food industry
Study on the disassembly, reconditioning and assembly of the crank and connecting-rod assembly mechanism for tractors engine
Study on maintenance and repair operations on the U650 tractor
Study on maintenance and repair operations on the Valtra T 190 tractor
Study on the maintenance of the tractor's engine distribution system
Study on maintenance of the injection system of tractor engines
Using the calculation technique for the diagnosis of tractors
Study on maintenance of the steering and rolling system for agricultural tractors
Study on the maintenance of the hydraulic system from agricultural tractors and combines for harvesters for cereals
Study on the maintenance of the electric system for agricultural tractors
Study on maintenance and repair operations at the combines for harvesters for cereals
Knowledge assessment

Design
Getting started regarding the preparation of repair sheets
Elaboration of the repair sheet for an agricultural tractor
Elaboration of the repair sheet for a combine for harvesting cereals
Knowledge assessment

Bibliografie

1. Chirilă C., – Tehnologia întreținerii și reparării utilajelor – Note de curs.;
2. Găgiu Ctin, 1995 – Fiabilitatea în exploatare a tractoarelor și mașinilor agricole – Agris redacția revistelor agricole
3. Ionuț V. ; Moldoveanu Gh. , 1976, tehnologia reparării utilajului agricol / EDP, București.
4. Popescu S.; Bădescu M.; 1992 – Diagnosticarea și întreținerea tehnică a tractoarelor – Editura Ceres, București.
5. Teodorescu N., 2008 – Menținanță generală în domeniul ingineriei mecanice – Editura Agir, București.
6. Tomescu D și colab, 1981 - Fiabilitatea utilajelor agricole – Editura Ceres, București.

7. Tomescu D și colab, 1988 – repararea utilajului agricol – Editura Ceres, București

Evaluare finală

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	written assessment	65%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	35%

Contact

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