

Self-propelled transportation systems (4th Year, 7th SEMESTER)

Credit value (ECTS) 4

Course category

Domain (Imposed)

Lecturer

prof. dr. Gheorghe Radu ROȘCA

Discipline objectives (course and practical works)

În cadrul cursului se urmărește familiarizarea studenților cu sistemele autopropulsate utilizate pentru efectuarea transporturilor în agricultură, crearea competențelor necesare înțelegerii modului în care are loc mișcarea autovehiculului, familiarizarea cu termenii specifici domeniului, înțelegerea influențelor diferiților factori (motor, etajarea cutiei de viteze) asupra caracteristicilor dinamice ale autovehiculului.

Contents (syllabus)

Course (chapters/subchapters)
General description and clasification of agricultural tractors. The four strokes compression ignition internal combustion engine. The main parts of the Diesel engine.
Cycle diagram of Diesel engine; characteristic curves of Diesel engine
Engine timing system.
Diesel engine fueling system
Lubrication and cooling system
The spark ignition engine
The steering mechanism
The braking system
Tractor transmission
Pneumatic braking systems for trailers
The three point hitch mechanism
The hydraulic system
The power take-off

Practicum
1. Materials used in the construction of tractors and agricultural equipment. Fuels, lubricants and special fluids.
2. Machine parts
3. Fixed and moving parts of the internal combustion engines. The timing mechanism.
4. Fueling systems for Diesel and spark ignition engines.
5. Lubrication and cooling systems
6. Ignition systems for spark ignition engines

7.Tractor transmissions
8.Braking, steering and rolling systems
9.Pneumatic braking systems.
10.Three point hitch mechanism, hydraulic system and power take-off.
11. Final colloquium of knowledge evaluation

References

1. Cazacu Dan si colab. – ‘Tractorul pe întelesul tuturor’ Edit. Pim , Iasi, 2004
2. Cazacu Dan – „Reducerea consumului de combustibil si tasării solului în agricultura”,Editura Pim. Iasi, 2009.
3. Radu Roșca si colab.-Combustibili neconvenționali pentru motoare cu ardere internă.Edit.Gh. Asachi Iași, 2002.
4. Dăscălescu D. – Motoare termice cu piston-aspecte constructive. Edit. Matrix Rom, București, 1998.
5. Neagu Tr., Cojocariu P. – Tractoare agricole. Univ. Agronomică Iași, 1995.
6. Roșca R., Cazacu D., - Construcția tractoarelor (ed. a II-a). Edit. „Ion Ionescu de la Brad”, Iași, 2015.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Course	Presence and active participation	10%
Practical training	Presence and active participation	30%
Final exam	Oral examination	60%

Contact person

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