

MINIMUM TILLAGE SYSTEMS (Ist YEAR, IInd SEMESTER)

Credit value (ECTS) 6

Course category

Domain (Imposed)

Course holder:

Prof. PhD. Costică AILINCĂI

Objectives / competencies:

The discipline “ *Minimum tillage systems*”, in accordance with the analytical program, has the following objectives:

- Knowledge of variants of minimum tillage systems
- The effects of minimum systems on some physical and hydrophysical properties with a decisive role in maintaining the fertility of the soil
- Measures to reduce the influence of factors that contribute to soil and water quality degradation;
- Degradation of soil quality, improvement of its hydrophysical and physical properties through unconventional work systems;
- Preventing and combating soil and water pollution;
- Equipment and machinery used in minimum systems;
- Technological elements for minimum tillage systems.

Content (syllabus)

Course (chapters / subchapters)
1. Objectives and importance of the discipline “ <i>Minimum tillage systems</i> ”
2. Advantages and disadvantages of minimum tillage systems. Conventional systems versus Minimum tillage systems
3. Classification of minimum tillage systems. Variants of minimum systems. Characteristics
4. Adaptability of agricultural soils to the use of minimum systems
5. Equipment and machinery used in minimum tillage systems
6. Fertilization and application of amendments within the minimum tillage systems
7. Integrated weed control within the minimum tillage systems
8. The influence of minimum systems on the main properties of the soil
10. Perspectives on the use of minimum tillage systems in Romania
Total
Practical works
1. Sampling and preparation of soil and plant samples
2. Determination of momentary soil moisture II (Tensiometric method, TDR method, Electronic method)
3. Determination of bulk density
4. Determination of soil porosity
5. Determination of water permeability of soil I (in the laboratory)

6. Determination of soil water permeability II - Hydraulic conductivity (in the field)
7. Determination of soil air permeability
8. Determination of penetration resistance
9. Determination of water stability of soil structure by the Kemper - Rosenau method
10. Determination of water stability of soil structure by the Thiulin - Erikson method (sample preparation)
11. Determination of water stability of soil structure by the Thulin-Erikson method (continued)
12. Determination of quality indices for soil tillage
13. Determination of quality indices for sowing works
14. Determination of quality indices for herbicide works
Total

Bibliography

1. Gerard Jităreanu, Costică Ailincăi, Simion Alda, Ileana Bogdan, Costică Ciontu, Dan Manea, Aurelian Penescu, Mihai Rurac, Teodor Rusu, Denis Țopa, Paula Ioana Moraru, Adrian Ioan Pop, Marian Dobre, Anca-Elena Calistru - 2020 -Tratat de Agrotehnică, Editura “Ion Ionescu de la Brad”, Iași, 1240 pagini, (p. 1219-1233), ISBN 978-973-147-353-6.
2. Gerard Jităreanu, Costică Ailincăi, 2016 – *Agrotehnica*, Ed. “Ion Ionescu de la Brad” Iași, ISBN: 978-973-147-183-9.
3. Ailincăi Costică, Jităreanu Gerard, Lucian Raus, Țopa Denis- 2013 - *Tehnologii de cultură și metode de protecție a solului - Crop technologies and methods for soil protection*, Editura “Ion Ionescu de la Brad”, Iași, 2013, 212 p, ISBN 978-973-147-121-1.
4. Denis Țopa, Gerard Jităreanu, Costică Ailincăi, Lucian Răus, 2013 – *Impactul unor sisteme minime asupra producției și fertilității solului*. Editura “Ion Ionescu de la Brad”, Iași. ISBN 978-973-147-122-8
5. Teodor Rusu, Ileana Bogdan, Adrian Ioan Pop, 2012 – *Îndrumător de lucrări practice de Agrotehnică*. Editura Grința, Cluj Napoca. ISBN 978-973-126-409-7

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Final Exam	Oral examination	50%
Labs Colloquium	Oral examination	10%
Partial exam	Written assessment	30%
Evaluation during the semester	Oral examination	10%

Contact

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