|  |  |
| --- | --- |
| **Title and code** of the subject: **Farm machines of the irrigation-irrigation technology, MTMVG7015A** | **ECTS Credit: 3** |
| **Type** of the subject: compulsory  |
| **Ratio of theory and practice:** (credit%) 30/70 |
| **Type and number of classes per semester**: 14 hour(s) lecture and 28 hour(s) practice per **semester** Number of classes per week: 1+2 |
| **Type of exam**: exam  |
| **Subject in the curriculum:** semester 2 |
| Preliminary requirements:- |

|  |
| --- |
| **Summary of content - theory**: The aim of the course is to learn the structural elements of irrigation systems and the settings of the equipment. The aim of the course is to learn how to control the operation of the irrigation system. Based on the studies students able to control the workflow of an irrigation system. |
| Course objectives:1. Mechanics of fluids I.
2. Mechanics of fluids II.
3. Type of pumps. Water pump features.
4. Operation of water pump.
5. Pipes and pipelines.
6. Couplings, pipe fittings. Pipe shut-off devices.
7. Water supply systems in agriculture.
8. Parts of irrigation equipment.
9. Sprinkler head irrigation system.
10. Reel drum irrigation system.
11. Linear, centre pivot irrigation system.
12. Micro spray and drip irrigation system.
13. Water power stations.
14. Water power turbines.
 |
| **Summary of content - practice**: |
| Skills to be learnt: 1. Mechanics of fluids I.
2. Mechanics of fluids II.
3. Type of pumps. Water pump features.
4. Operation of water pump.
5. Pipes and pipelines.
6. Couplings, pipe fittings. Pipe shut-off devices.
7. Water supply systems in agriculture.
8. Parts of irrigation equipment’s.
9. Sprinkler head irrigation system.
10. Reel drum irrigation system.
11. Linear, centre pivot irrigation system.
12. Micro spray and drip irrigation system.
13. Water power stations.
14. Water power turbines.
 |
| **Literature, handbooks in English**  |
| 1. Glenn J. Hoffman, Robert G. Evans, Marvin Eli Jensen, Derrel L. Martin, Ronald L. Elliott: Design And Operation Of Farm Irrigation Systems ISBN-13: 978-1892769640, ISBN-10: 1892769646
2. Brian Bell: Farm Machinery ISBN 1903366682
3. John Carrol: Tractors and Farm Machinery ISBN-13: 978-0754826583
 |
| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**
* Students will learn the general and specific characteristics of their expertise.
* Students learn about the connection between the field and related disciplines.
1. **Skills:**
* Students identify special professional problems with a versatile, interdisciplinary approach.
* Students explore the theoretical and practical background.
1. **Attitude:**
* Students bring the latest expertise to their own development.
1. **Autonomy and responsibility:**
* Students plan and perform their activities independently.
 |

|  |
| --- |
| **Responsible lecturer: Dr. Hagymássy Zoltán** |
| **Other lecturer(s): -** |
| **Terms of course completion:** |
| 1. Completing assignments / exercises
 |
| **Form of examination:** |
| 1. Completing exercise
 |
| **Requirement(s) to get signature:** |
| 1. Giving presentation
 |
| **Exam questions:** |
| 1. Calculate the parameters of fluids.
2. Calculate the parameters of the pipeline.
3. Introduce the type of pumps.
4. Operation of water pump.
5. Introduce the pipes and pipelines.
6. Introduce the couplings, pipe fittings. Pipe shut-off devices.
7. Introduce the water supply systems in agriculture.
8. Introduce the parts of irrigation equipment.
9. Introduce the sprinkler head irrigation system.
10. Introduce the reel drum irrigation system.
11. Introduce the linear, centre pivot irrigation system.
12. Introduce the micro spray and drip irrigation system.
13. Introduce the water power stations, Pelton and Francis turbine.
14. Introduce the water power stations s. Kaplan and Bánki turbine.
 |