REQUIREMENTS
2021/2022. academic year I. semester

Name and code of the subject: Fodder plant production, MTMAL7006A
Name and title of the person responsible for the subject: Dr. Erika Tünde Kutasy, assistant professor
Additional instructors involved in teaching the subject:
Name and level of the program: Animal Husbandry Engineering, MSc
Subject type: compulsory
Teaching timetable of the subject, type of examination: 2+0 P
Credit value of the subject: 3

Purpose of teaching the subject:
Fodder Plant Production subject deals with the agroecological, biological-genetic and agrotechnical factors of crop production. General and special elements in fodder crops production. Ecological, biological and agrotechnical circumstances of crop management. Production of feeds in crop production. General knowledges of fodder crops. Alfalfa and other fodder crops management. General knowledges of cereals. Maize production. Other cereals production.

Content of the subject (14 weeks):
1. Main targets, tasks of crop production. The role of crop production factors
2. Climate and weather conditions in Hungary. Their effect on the crop production.
3. Main soil types and their characteristics.
4. Biological basis of crop production (genotype, seeds). GM plants.
5. Crop rotation, forecrop's value.
6. Nutrient supply of plants.
7. Soil cultivation and sowing technology.
8. Integrated Plant protection.
9. Irrigation methods. Harvesting time and methods.
10. Groups of feeds or feedstuffs
11. General overview of cereal production. Wheat cultivation.
12. Production of spring cereals. Oat cultivation.
13. Maize and maize for silage production.
14. Fodder crops in Fabaceae family. Alfalfa cultivation.

Type of mid-term examination:
- Completing assignments
- Giving a short presentation

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): practical grade

Teaching aids: lecture material

Recommended literature:
Martin, John H., Leonard, Warren H., Stamp. David L., Waldren, Richard: Principles of Field Crop Production. 2005. ISBN: 0130259675
Pratley, Jim: Principles of Field Crop Production. 2006. ISBN: 0195515552

Acquaah, G. 2001: Principles of crop production. Theory, Techniques and Technology. Pearson Prentice Hall. ISBN 0-13-114556-8
Jolánkai M.: Crop Production. Akaprint. Budapest. 2002.
Birkás M.: Environmentally – sound adaptable tillage. Akadémiai Kiadó, Budapest. 2008.
Nagy J.: Maize production. Akadémiai Kiadó, Budapest. 2008.

REQUIREMENTS
2021/22 academic year 1 semester

Name and code of the subject: Fish Breeding MTMAL7016A
Name and title of the person responsible for the subject: Laszlo Stündl PhD
Additional instructors involved in teaching the subject:
Name and level of the program: Animal husbandry MSc
Subject type: compulsory
Teaching timetable of the subject, type of examination: 2+0 P
Credit value of the subject: 3

Purpose of teaching the subject: Course objective : to provide information on the theory of fish genetics and breeding including the broodstock management, induced and natural reproduction, fry and larvae management. The knowledge acquired will enable to participate / cooperate in practical breeding programmes.

Content of the subject (14 weeks):

1. Introduction to fish breeding
2. Fish biology (Diversity, physiology, anatomy – reproduction organs)
3. Fish reproduction: natural spawning
4. Induced spawning
5. Larval development & rearing
6. Genetics
7. Breeding programmes (Mass, selective, etc.)
8. Breeding techniques
9. Biotechnology in fish breeding
10. Breeding in practice (preparation & propagation)
11. Breeding in practice (hatching & larvae management)
12. Breeding of carps
13. Breeding of percids
14. Breeding of catfishes

Type of mid-term examination: Taking part on the 70% of the practices are compulsory.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): practical grade

Teaching aids: Lecture slides & handouts (texts)

Recommended literature:

1. FAO (2016): The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp.
2. Boyd, C.E., Lim, C., Queiroz, J., Salie, K., de Wet L., McNevin, A. (2012): Best Management Practices for Responsible Aquaculture. Aquaculture Collaborative Research Support Program [ACRSP]
3. Gomelsky. B. (2011): Fish Genetics: Theory and Practice March 2011 Publisher: VDM Verlag Dr. Müller ISBN: 9783639328059,
4. Ponzoni, R.W., B.O. Acosta and A.G. Ponniah. (eds). 2006. Development of aquatic animal genetic improvement and dissemination programs: current status and action plans, WorldFish Center Conference Proceedings 73, 120p

REQUIREMENTS
2021/22 academic year 1 semester

Name and code of the subject: Aquaculture MTMAL7024A
Name and title of the person responsible for the subject: Laszlo Stündl PhD
Additional instructors involved in teaching the subject:
Name and level of the program: Animal husbandry MSc
Subject type: compulsory
Teaching timetable of the subject, type of examination: 2+1 P
Credit value of the subject: 3

Purpose of teaching the subject: Course objective to provide theoretic information on semi-intensive, intensive and integrated aquaculture systems and technologies including key species, fish biology, technologies, feeding, and economics.

Content of the subject (14 weeks):

15. Current status and tendencies in aquaculture
16. Aquatic resources
17. Fish species of aquaculture
18. Water management in aquaculture
19. Hydrobiology and plankton management
20. Fish biology propagation and larvae management
21. Pond management
22. Feeding and nutrition
23. Cage aquaculture
24. Recirculating aquaculture
25. Integrated multitrophic aquaculture
26. Multifunctional aquaculture
27. Aquaculture economics
28. Business planning in aquaculture

Type of mid-term examination: Taking part on the 70% of the practices are compulsory.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): practical grade

Teaching aids: Lecture slides & handouts (texts)

Recommended literature:

5. FAO (2016): The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp.
6. Boyd, C.E., Lim, C., Queiroz, J., Salie, K., de Wet L., McNevin, A. (2012): Best Management Practices for Responsible Aquaculture. Aquaculture Collaborative Research Support Program [ACRSP]
7. Burke, D., Goetze, B., Clair D., Egna H. (1996): Pond Dynamics/Aquaculture. Collaborative Research Support Program. Office of International Research and Development Oregon State University, USA

8. Allan, G., Heasman H., Ferrar P. (2006): Aquaculture Nutrition: Report on the Aquaculture Nutrition Master Class held at Asian Institute of Technology, Bangkok Thailand 7-19 August 2006 ISBN 0 7347 1771 7

REQUIREMENTS
2021/2022 academic year I. semester

Name and code of the subject: Planning of animal Farms, MTMAL7015A
Name and title of the person responsible for the subject: Dr. Zoltan Hagymassy associate professor
Additional instructors involved in teaching the subject: Dr. Adrienn Kakuszi-Széles associate professor, Dr. András Tamás associate professor
Name and level of the program: Animal Husbandry Engineering MSc
Subject type: compulsory
Teaching timetable of the subject, type of examination: 2+0 colloquium
Credit value of the subject: 3

Purpose of teaching the subject:
Students learn about the planning of the animal farms and its equipment, and the machines structural elements, and able to managing the operation of the machines. Based on the studies Students necessary to plan the workflow.

Content of the subject (14 weeks):

1. Agricultural buildings
2. Stable systems
3. Mowers
4. Balers I.
5. Balers II.
6. Silage making machines
7. Forage Harvester
8. Fodder mixing plant
9. Cattle farming machines (feeding, watering).
10. Milking machines I.
11. Milking machines II.
12. Pig farming equipment
13. Poultry farming equipment.
14. Horse farming equipment.

Type of mid-term examination:
Participation in practical classes is a condition for obtaining a signature. Completing exercises.

Method of assessment (semester examination mark - report, practical grade, colloquium, examination): practical grade

Teaching aids: Power point slides of university lectures issued to students

Recommended literature:
Brian Bell: Farm Machinery ISBN 1903366682
John Carrol: Tractors and Farm Machinery ISBN-13: 978-0754826583

Aquaculture. (MTMAL7024A)

2021/2022 1.semester

Title of the subject. code: Aquaculture. (MTMAL7024A)
Lecturer: Dr. Péter Bársony, assistant professor
Other lecture involved: -
Name of the training and level: animal husbandry MSc
Type of the subject: compulsory
The time schedule of the subject, type of the exam: 1+2 P
Credit value: 3

Summary of content:
Course objectives: to provide theoretic information on pond fish culture intensive fish farming including key species, fish propagation, extensive and intensive technologies, including feeding as well as the significance of stock assessment and the factors influencing fish production in aquaculture.

The content of the subject (14 weeks):

1. Current status and tendencies in aquaculture
2. Aquatic resources
3. Water management in pond culture
4. Applied hydrobiology – plankton management
5. Key fish species
6. Fish biology propagation
7. Larvae management
8. Feeding and nutrition
9. Cage culture
10. Recirculating aquaculture
11. Integrated aquaculture
12. Multifunctional aquaculture
13. Design of aquafarms - pond culture
14. Recirculating Aquaculture Systems Design

Exam on the end of semester:
After the semester the students receive a technical grade

Teaching potentially educational:
Presentation of the lessons

Literature:

9. FAO (2016): The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp.
10. Boyd, C.E., Lim, C., Queiroz, J., Salie, K., de Wet L., McNevin, A. (2012): Best Management Practices for Responsible Aquaculture. Aquaculture Collaborative Research Support Program [ACRSP]
11. Burke, D., Goetze, B., Clair D., Egna H. (1996): Pond Dynamics/Aquaculture. Collaborative Research Support Program. Office of International Research and Development Oregon State University, USA
12. Allan, G., Heasman H., Ferrar P. (2006): Aquaculture Nutrition: Report on the Aquaculture Nutrition Master Class held at Asian Institute of Technology, Bangkok Thailand 7-19 August 2006 ISBN 0 7347 1771 7