Academic subject: Animal Breeding Techniques			
Degree Class: L38		**Degree Course:** Animal Science	**Academic Year:** 2020/2021
		Kind of class: mandatory	**Year:** III / **Period:** I semester
			ECTS: 7 divided into **ECTS lessons: 6** **ECTS exe/lab/tutor: 1**
Time management, hours, in–class study hours, out–of–class study hours lesson: 60 exe/lab/tutor: 25 in–class study: 0 out–of–class study: 90			
Language: Italian	**Compulsory Attendance:** yes		
Subject Teacher: Aristide Maggiolino	**Tel:** +390805443915 **e–mail:** aristide.maggiolino@uniba.it	**Office:** Department of Veterinary Medicine Room 36 Floor 1	**Office days and hours:** Tuesday and Thursday 2:00pm-4:00pm. According to an appointment requested by e-mail. Tutoring can be done using e-learning platforms.
Prerequisites: The student must know the veterinary anatomy, physiology and endocrinology of the species in livestock production, with particular reference to the digestive, reproductive, galactopoietic systems and functions, and to body development. It is necessary for the student to know the fundamental principles of genetic improvement and the morphological and functional evaluation of animals of zootechnical interest			
Educational objectives: The course aims to provide knowledge tools on traditional and innovative breeding techniques and on the economic aspects of the production of the various species of zootechnical interest. In addition, tools will be provided for understanding the physiological and productive responses of animals in livestock production in relation to the various farm management systems with the aim of increasing the safety and quality of animal production and the link between hygiene, health and animal welfare. and quantitative-qualitative productivity.			
Expected learning outcomes (according to Dublin Descriptors)	**Knowledge and understanding:** Knowledge of the breeding techniques for each species and category of zootechnical interest, knowledge of the production and hygiene standards and their effects on animal welfare **Applying knowledge and understanding:** The student must be able to evaluate the quality of a farming system, identify its strengths and weaknesses and be able to propose alternative solutions to improve farm management **Making judgements:** Ability to collect all the data from a farm (managerial, animal based and obtained from the workforce) necessary for an organic assessment of the farm's management quality. **Communication:** Rationing of livestock animals: cattle, sheep and goat, pig, horse, poultry, rabbit and pets. **Lifelong learning skills:** Ability to maintain, develop and expand the knowledge acquired.		
Course program: Dairy cattle: reproduction management. Colostrum, reconstituted milk, breastfeeding. Veal and heifer management. Breeding techniques for lactating calf, transition and dry cows. Functional tie of the claws. Influence of business management on productive and reproductive parameters. Stables and milking parlors. Technical characteristics of mechanical and robotic milking systems. Sensors and software applied for animal welfare and management. **Beef cattle**: Zootechnical categories of beef cattle. Veal calf meat, half lactone, barley beef, baby beef, veal: farming techniques, live performance, quality of meat. Cow-veal and heifer-veal line. **Sheep and goats**: reproduction management. Colostrum, reconstituted milk and breastfeeding. Natural and artificial feeding of lambs, and kids, weaning. Breeding techniques for lambs or recovery for milk production. Breeding techniques for dry and lactating sheep. Sheepfolds and milking parlors. Pasture management and pasture integration. Breeding techniques for meat production: suckling lamb, kid, heavy lamb, lamb, mutton. **Pigs**: types of pig farms and their structural and functional subdivision. reproduction management. Litters, suckling and weaning of piglets. Breeding techniques for wars and gilts. Fattening techniques and commercial categories of pigs. Pig farm structures and equipment. Innovative management models: band farming. **Equidae**: management of reproduction. Nursing and weaning of the foal. Horse breeding techniques for meat production. Horse and donkey breeding techniques for milk production. Training and breeding techniques for sport horses (trot, gallop, show jumping, dressage, American riding, endurance). Techniques of functional trimming and shoeing. Facilities for equines. **Principles of Zootechnical Hygiene**: water, food, transport of animals, hygiene of livestock facilities. Management of wastewater. Bovine foot and udder hygiene. **Buffalo**:			

buffalo calf management, heifer and heifer management, lactation management. Milk and meat production.

Teaching methods: The course includes, in the front part, lessons held with the help of slides and collective viewing of websites. In addition, for some topics, the use of co-presence with industry experts is envisaged. At the end of each macro-topic, exercises will be carried out in the field with the possibility for the student to acquire the information received in the classroom in a practical context and self-check the skills relating to management evaluation in the various livestock farms.

Auxiliary teaching: Lessons distributed during the course integrate the reference bibliography.

Assessment methods: Oral exam on topics as for program. The student must demonstrate the skills acquired during the course, the knowledge of the principles of animal breeding techniques; the student will have to demonstrate mastery of technical language and the relationship between animal breeding and quality of livestock production.

Bibliography: Lessons notes. Scientific papers.

BITTANTE G., ANDRIGHETTO L., RAMANZIN M.: Tecniche di produzione animale. Liviana Ed., Torino,
- MONETTI P.G.: Allevamento dei suini e dei bovini. Giraldi Ed., Perugia 2001
- PARIGI BINI R., SOMEDA DE MARCO A.: Zootecnica Speciale dei Bovini. Produzione della carne. Patton Ed., Bologna, 1989
- SUCCI G., HOFFMANN I.: La vacca da latte. Città Studi Ed., Milano, 1993
- SUCCI G.: Zootecnia speciale. Città Studi Ed., Milano, 1995
- Lewis L.D. (1998) Alimentazione e allevamento del cavallo. F. Valfrè Ed., EMSI
- Padalino, Santamaria, Tateo (2010) Tecniche di doma degli equini. Aracne Editore

website:
Hoard's Dairyman http://www.hoards.com/
Penn State Extention http://extension.psu.edu/animals/dairy
Univ of Wisconsin http://www.uwex.edu/ces/dairynutrition/; http://milkquality.wisc.edu/
http://dairymgt.uwex.edu/tools.php
Cornell University http://www.ansci.cornell.edu/prodairy/
http://www.extension.org/beef_cattle
http://beef.unl.edu/
http://www.iowabeefcenter.org/
http://www.ansci.colostate.edu/beef/
http://www.usporkcenter.org/default.aspx#.UV5ySZO7NLd
Iowa Pork Industry Center www.ipic.iastate.edu
North Carolina State University Swine Husbandry http://mark.asci.ncsu.edu/
Ohio Pork Industry Center http://porkinfo.osu.edu/
University of Nebraska Pork Central http://porkcentral.unl.edu/
Illini Pork Net http://www.livestocktrail.uiuc.edu//porknet/
Purdue Pork Page http://www.ces.purdue.edu/pork/
University of Minnesota Swine Extensionhttp://www.extension.umn.edu/swine/