



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali
ACADEMIC YEAR	2016/2017
MASTER'S DEGREE (MSC)	FIRM AND QUALITY FOR THE AGRICULTURAL AND FOOD SYSTEM
SUBJECT	GRASSLAND TECHNOLOGY AND ALPICULTURE
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50544-Discipline della produzione
CODE	18589
SCIENTIFIC SECTOR(S)	AGR/02
HEAD PROFESSOR(S)	DI MICELI GIUSEPPE Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	9
INDIVIDUAL STUDY (Hrs)	135
COURSE ACTIVITY (Hrs)	90
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	DI MICELI GIUSEPPE Monday 09:00 11:00 Studio del docente - Dip. SAAF Ed.4 Ingresso L, 2° Piano - studio 210 Friday 10:00 12:00 Studio del docente - Dip. SAAF Ed.4 Ingresso L, 2° Piano - studio 210

DOCENTE: Prof. GIUSEPPE DI MICELI

PREREQUISITES	no prerequisite
LEARNING OUTCOMES	Knowledge and Comprehension on the grazing management techniques; Ability to learn aspects and factors related to the concept of management of forage systems; Making judgments: evaluate the effects of different management practices of forage crops; Communication skills: ability of expose clearly the effects agronomic techniques on the management of forage resources; Learning ability: update capability with the consultation of scientific publications.
ASSESSMENT METHODS	Oral examination on the course topics and written report on a case study
EDUCATIONAL OBJECTIVES	Objective of the course is to provide basic knowledge and applied about: forage production; forage management systems in hot-arid Mediterranean environments; eco-physiology of forage species; the relationships between forage production, quality and forage conservation issues in livestock farms.
TEACHING METHODS	Lectures on the topics, visits on livestock farms and laboratory exercises
SUGGESTED BIBLIOGRAPHY	1) Baldoni, R., Giardini L., 2000. Coltivazioni erbacee: Foraggiere e tappeti erbosi, III volume. Patron Editore, Bologna. 2) Fahey, G.C. (Ed.) 1995. Forage quality, evaluation and utilization. ASA-CSSA-SSSA Publishers, Madison, Wisconsin. 3) Barnes et al., 2003. Forages Vol. 1. An Introduction to grassland agriculture. Blackwell Publishing, Ames, Iowa. 4) Appunti del docente

SYLLABUS

Hrs	Frontal teaching
4	Forage crops: historical and evolution of the production and conservation of fodder in the Mediterranean environment
3	Morphology and physiology of grasses and legumes forage. The main stages of development of grasses and legumes. Influence of time of cutting on regrowth.
6	Agro-technical of forage crops: soil preparation, time and method of sowing, organic and mineral fertilization, irrigation. Management of fertilization of the forage crop.
3	Nutritive value of forage crop: methods for assessing the quality of fodder. Environmental and genetic factors of variation in the quality of feed. Influence of the stage of development of the plant on the characteristics of grass.
15	Pasture: definition and issues. Techniques of pasture improvement. Natural resource management.
5	Techniques of pasture and response on the quality and production of fodder
2	Forage conservation: general conservation of fodder. Loss of conservation.
6	Haymaking: the drying process of forage in the field. Mechanical conditioning of the crop. Breathing and mechanical losses during haymaking of grasses and legumes. Post-harvest deterioration of hay. The artificial drying of hay.
6	Silage making: biochemical principles of silage. Ensilability of different forage crops: the case of maize silage of Italian ryegrass and alfalfa. Enzyme activities and fermentation. Microorganisms involved in fermentation and deterioration of silage. The cycle of clostridia. Losses during ensiling with particular reference to aerobic deterioration. Silage additives. Chemical analysis and nutritive value of silage. The practice of silage. Implications of the type of forage conservation on the dairy supply chain.
8	Seed production : general aspects. The production of seed of fodder species. Case study of two forage crops
Hrs	Practice
16	Technical visits: pastures and vegetation analysis
8	Technical visits: farming methods applied to forage crops
8	Technical visits: utilization of forage resources