



# UNIVERSITÀ DEGLI STUDI DI PALERMO

<b>DEPARTMENT</b>	Scienze Agrarie, Alimentari e Forestali		
<b>ACADEMIC YEAR</b>	2018/2019		
<b>MASTER'S DEGREE (MSC)</b>	AGRICULTURAL PRODUCTIONS AND TECHNOLOGIES		
<b>SUBJECT</b>	TURFGRASS SCIENCE AND MANAGEMENT		
<b>TYPE OF EDUCATIONAL ACTIVITY</b>	B		
<b>AMBIT</b>	50544-Discipline della produzione		
<b>CODE</b>	15478		
<b>SCIENTIFIC SECTOR(S)</b>	AGR/02		
<b>HEAD PROFESSOR(S)</b>	SARNO MAURO	Professore Associato	Univ. di PALERMO
<b>OTHER PROFESSOR(S)</b>			
<b>CREDITS</b>	6		
<b>INDIVIDUAL STUDY (Hrs)</b>	90		
<b>COURSE ACTIVITY (Hrs)</b>	60		
<b>PROPAEDEUTICAL SUBJECTS</b>			
<b>MUTUALIZATION</b>			
<b>YEAR</b>	1		
<b>TERM (SEMESTER)</b>	2° semester		
<b>ATTENDANCE</b>	Not mandatory		
<b>EVALUATION</b>	Out of 30		
<b>TEACHER OFFICE HOURS</b>	<p><b>SARNO MAURO</b></p> <p>Tuesday 10:00 11:00 Dipartimento di Scienze Agrarie, Alimentari e Forestali (S.A.A.F.) - V.le delle Scienze, Edificio 4 - Ingresso L - Piano 2° - Stanza 8</p> <p>Thursday 10:00 11:00 Dipartimento di Scienze Agrarie, Alimentari e Forestali (S.A.A.F.) - V.le delle Scienze, Edificio 4 - Ingresso L - Piano 2° - Stanza 8</p>		

DOCENTE: Prof. MAURO SARNO

<b>PREREQUISITES</b>	Agronomy, pedology or soil chemistry, plant physiology
<b>LEARNING OUTCOMES</b>	<p>Acquire a specific knowledge of the "grass-atmosphere-soil " system taking into account the different characteristics of the three systems also in relation of the various and particular agronomic techniques.</p> <p>Acquire skills concerning the problems of design, implementation and management of turf for different purposes (technical, ornamental and sports), in different soil and climatic environments.</p> <p>Ability to solve complex problems related to environmental issues and turf management considering the cost /benefit ratio also. Comprehension of a systemic and integrated vision of the agronomic issues of turf and the methods of investigation.</p> <p>Autonomy of judgement- The student will be able, in total autonomy, to judge the different issues affecting turf and turfgrass, and to evaluate and to decide the most appropriate agronomic means necessary to the solution.</p> <p>Ability to use a technically correct language, in addressing the choices of technician for the optimization of the agronomic practices for turf, in accordance with the current law.</p> <p>Be able to understand, and learn texts and academic papers also in English.</p> <p>Ability to connect the different factors involved in turf production and to participate in research and experiments relating to turf.</p>
<b>ASSESSMENT METHODS</b>	<p>The candidate will have to answer at least to two / three oral questions, on the whole program, with reference to the recommended texts. The candidate must submit a technical agronomic report on the construction of a turf in a place and type of his choice. The report will be discussed. The candidate must be able to give reasons for the choices made and therefore the more exact the report and the choices are, the more the candidate is able to motivate these choices, the higher the score will be. The final assessment aims at evaluating whether the student has knowledge and understanding of the topics, if he has acquired the right skills to interpret and analyze some concrete cases. The pass mark will be reached when the student shows knowledge and understanding of the subjects at least in general terms, and he has minimal knowledge skills in order to solve concrete cases; he must also show to have presentation skills to expose his knowledge to the examiner. Below this threshold, the examination will be insufficient. The more, however, the examinee with his argumentative and presentation skills can interact with the examiner and he can go into more details on the subject, the more the assessment will be positive. The assessment will be evaluated out of thirty. Minimal knowledge skills The candidate must be able to list, interpret and use the environmental factors needed for a proper agronomic intervention plan (ex. for a fertilization plan).</p>
<b>EDUCATIONAL OBJECTIVES</b>	The course aims to provide the most 'up to date knowledge and skills related to the design, implementation and management of various types of turfs (technical, ornamental, recreational and sports).
<b>TEACHING METHODS</b>	Lectures in the classroom and in the field, exercises in the classroom
<b>SUGGESTED BIBLIOGRAPHY</b>	<p>- "TAPPETI ERBOSI" di A. Panella, P. Croce, A. De Luca, M. Falcinelli, F.S. Modestini, F. Veronesi. Ed.: Calderini-Edagricole (1° edizione: novembre 2000 e successive);</p> <p>- "Turfgrass management" di A.J. Turgeon, Ed.: Prentice Hall (7° ed. e successive);</p> <p>- Materiale didattico (articoli e pubblicazioni) fornito dal docente durante il corso.</p>

## SYLLABUS

Hrs	Frontal teaching
4	History of Turf. Importance of turf. The turfgrass industry. The different turfgrass purpose. Environmental benefit.
8	Growth and development of grass plant. Morphological description. How to identify the different turfgrass species. Cool season and warm season species for turfgrass
6	Intercropping of species or varieties. Competition concept. Succession concept. Criteria for composing a mixture or blend. Examples of stable intercropping system.
9	THE CONSTRUCTION of turf for different uses. Removal of existing vegetation. Tillage. The collection of stones. The construction of drainages systems. The installation of irrigation system. Soil correction and amendment. The fertilization. The soil for seeding. Sowing and vegetative propagation.
8	<p>PRIMARY CULTURAL PRACTICES</p> <p>THE MOWING: Agronomic e fisiology effect of mowing on turfgrass.</p> <p>THE FERTILIZATION: Agronomic and fisiology effect of fertilization on turfgrass.</p> <p>THE IRRIGATION: Agronomic and fisiology effect of fertilization on turfgrass</p> <p>SUPPLEMENTARY CULTURAL PRACTICES</p> <p>THE CULTIVATION of turfgrass and the agronomic and fisiology effect of on turfgrass</p> <p>Other CULTIVATION PRACTICES: topdressing, verticutting, thatch control, rolling and overseeding</p>

## SYLLABUS

Hrs	Frontal teaching
6	THE Weed control in turfgrass Definition and classification of more 'common weeds in turfgrass, the biology of weeds. Reproduction and dissemination in turfgrass The ecology of weeds. colonization strategies. The dynamics of populations within the "cultivated" areas. The damage caused by weeds in turfgrass, chemical management and control systems in the pre-emergency and post-emergency, non-chemical means of control: agronomic, mechanical, physical, biological, ecological.
3	TURFGRASS PEST MANAGEMENT (notes)
Hrs	Practice
2	How to identify the different turfgrass species
2	Fertilization plan
Hrs	Workshops
4	Technical tour in professional golf course.
2	Technical tour in professional soccer field.
2	Technical tour in semi-professional golf course.
2	Technical tour in professional training soccer field.
2	Tour in a public recreation turfgrass close to the sea