



UNIVERSITÀ DEGLI STUDI DI PALERMO

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| DEPARTMENT | Scienze Agrarie, Alimentari e Forestali | | |
| ACADEMIC YEAR | 2019/2020 | | |
| MASTER'S DEGREE (MSC) | AGRICULTURAL PRODUCTIONS AND TECHNOLOGIES | | |
| SUBJECT | APPLIED AGRO-METEOROLOGY | | |
| TYPE OF EDUCATIONAL ACTIVITY | D | | |
| AMBIT | 20742-A scelta dello studente | | |
| CODE | 18752 | | |
| SCIENTIFIC SECTOR(S) | AGR/02 | | |
| HEAD PROFESSOR(S) | LICATA MARIO | Professore Associato | Univ. di PALERMO |
| OTHER PROFESSOR(S) | | | |
| CREDITS | 3 | | |
| INDIVIDUAL STUDY (Hrs) | 45 | | |
| COURSE ACTIVITY (Hrs) | 30 | | |
| PROPAEDEUTICAL SUBJECTS | | | |
| MUTUALIZATION | | | |
| YEAR | 1 | | |
| TERM (SEMESTER) | 2° semester | | |
| ATTENDANCE | Not mandatory | | |
| EVALUATION | Out of 30 | | |
| TEACHER OFFICE HOURS | LICATA MARIO Monday 10:00 13:00 presso stanza del Dott. Mario Licata, Dipartimento di Scienze Agrarie, Alimentari e Forestali, Viale delle Scienze 13, Edificio 4, Ingresso L, Piano 2 | | |

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| PREREQUISITES | The attendance of the course "Applied Agro-meteorology" requires the knowledge of Agronomy, for the understanding of the main content and objectives of the course. The course provides no mandatory prerequisites, but the knowledge of some subjects is needed to understand the main technical and practical problems of the course and to provide rational solutions. |
| LEARNING OUTCOMES | <p>a) Knowledge and understanding The course permits students to gain knowledge about the agro-meteorological variables and their effects on agricultural crops. The course also allows to schedule the main agricultural practices (e.g. sowing, weed control and harvesting) through the application of agro-meteorological knowledge. The understanding of the main contents of the course requires a specific technical language of this course.</p> <p>b) Applying knowledge skill and understanding The main aim of the course is to encourage the students to develop skills to plan specific farming practices considering the effects of agro-meteorological variables on agricultural crops and to use the main agro-meteorological instruments according to the reference farming context .</p> <p>c) Making judgments The course requires students to be able to independently assess the effects of agro-meteorological variables on crop yields in order to implement the farming activities exploiting the scientific research.</p> <p>d) Communications skills The course requires that students have communication skills in order to transfer clearly information and technical solutions to professionals, entrepreneurs, administrators and commentators. It requires that the dissemination activity is also carried out towards to a non-expert public.</p> <p>e) Learning skills The course requires that students are able to study issues of the course by consulting scientific literature, scientific publications and popular magazines. It requires, also, the ability to transfer the technical knowledge gained following the course or specific meetings, in business and professional sector.</p> |
| ASSESSMENT METHODS | The course consists of an oral test. The oral test consists of an interview in order to check the skills and disciplinary knowledge provided by the course. Evaluation will be provided as a mark out of 30. The interview will include open-ended and semi-structured questions in order to verify the gained knowledge, the computing and presentation skills of the student. With regard to the evaluation of knowledge, students have to be able to make connections between the course contents. The evaluation of computing skills will be determined by the student's ability to provide independent judgments about the course contents, to understand the possible practical application of the course and to place the subject content within the target professional context. With regards to the evaluation of the computing capacities, a high quality of language will be required for the reference professional context. The highest score (30/30 with honours) will be awarded to the student who will prove to have a high capacity for judgment, a strong ability to put into practice the knowledge of the course through examples and/or models, a strong ability to provide solutions to the main problematic and to have a high quality the technical language. The lowest score (18/30) will be awarded to the student who will prove to have a low capacity for judgment, a poor ability to put into practice the knowledge of the course through examples and/or models, a poor ability to provide solutions to the main problematic and to have a low quality the technical language. |
| EDUCATIONAL OBJECTIVES | The aim of the course " Applied Agro-meteorology" is to provide knowledge and specialist skills related to the study of quantitative relationships between agricultural practices and agro-meteorological variables in order to optimize the farming activities. The understanding of the topics requires the knowledge of Agronomy. The training will consist of frontal teaching, practices and technical-educational events to visit experimental fields. |
| TEACHING METHODS | The course consists of frontal teaching, practices and technical-educational events to visit experimental fields. |
| SUGGESTED BIBLIOGRAPHY | Bonari, Masoni, Ercoli. Agrometeorologia. SEU, Pisa. Giardini. Agronomia generale, aziendale e ambientale. Patron, Padova. Cecon P., Borin M., 1995 - Elementi di agrometeorologia e agroclimatologia. Imprimer. Tupper G.J., Mavi H.S., 2004 - Agrometeorology: Principles and Applications of Climate Studies in Agriculture. Food Products Press, U.S. Materiale delle lezioni e siti web di interesse tematico. |

SYLLABUS

| Hrs | Frontal teaching |
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| 2 | Presentation of the course. Definition of agro-meteorology and its implications on the productivity of agricultural crops. The main agro-meteorological parameters. Definition of climate concepts, microclimate and macroclimate. |
| 3 | Solar radiation (direct and diffuse), radiation parameters, laws. Energy balance. Total and relative eliophany. Effects of solar radiation on agricultural crops. |
| 3 | Temperature and heat. Temperature parameters. Thermal sum. Air and temperature. Effects of temperature on agricultural crops. |
| 2 | Relative humidity. Definitions and general aspects. Dew-point temperature. Effects of relative humidity on agricultural crops. |
| 3 | Rainfall. Rainfall characteristics: amount, distribution, frequency, intensity, duration. Measure of the rainfall. Useful rainfall. Importance of the rainfall for agriculture crops. |
| 3 | Wind. Intensity and direction. Measure of wind speed. Effects of wind on agricultural crops. Defense from wind in agriculture. |
| 3 | Evaporation and evapotranspiration. Methods of measure and estimate of the effective evapotranspiration by calculating the crop coefficients. Weighing lysimeters. |
| 1 | Agro-meteorological stations. Location, placement and management in the field of agro-meteorological instruments. |
| 4 | Applications of agro-meteorology: Long and brief term planning: sowing, harvesting, weed control. |
| Hrs | Practice |
| 4 | Practices. Applications of the main meteorological instruments |
| Hrs | Others |
| 2 | Technical-educational events to visit experimental fields. |