

DARIO AMBROSINI

PROGRAMME OF "TECNICHE DI CONTROLLO NELLA PROTEZIONE DI MATERIALI E MANUFATTI" "NON DESTRUCTIVE TESTING METHODS FOR THE PROTECTION OF MATERIALS AND ARTEFACTS"		
<ul style="list-style-type: none"> • CODE: 10744 • TYPE OF COURSE UNIT: OPTIONAL • LEVEL OF COURSE UNIT (E.G. FIRST, SECOND OR THIRD CYCLE; SUB-LEVEL IF APPLICABLE): FIRST CYCLE • YEAR OF STUDY (IF APPLICABLE): THIRD YEAR, FIRST SEMESTER 		
NUMBER OF ECTS CREDITS: 6 (WORKLOAD OF 60 HOURS OF TEACHING + WORK AT HOME; 1 CREDIT = 25 HOURS OF TOTAL ACTIVITIES)		
Teacher: Prof. Francesco Veglio'		
1	Course objectives	THE FIRST OBJECTIVE OF THE COURSE IS TO GIVE TO THE STUDENT THE MAIN INFORMATION ABOUT DEGRADATION OF MATERIALS AND A BASIC UNDERSTANDING OF A VARIETY OF MODERN OPTICAL METHODS OF MEASUREMENTS AND THEIR APPLICATIONS IN NONDESTRUCTIVE TESTING (NDT). OUR SECOND GOAL IS TO LEARN AND USE THERMOGRAPHY AND QUANTITATIVE THERMOGRAPHY. HANDS-ON PRACTICAL WORK WILL ALLOW THE STUDENTS TO PRACTICE SOME OF THESE CONCEPTS. MANY EXAMPLES ARE GIVEN OF DIAGNOSTICS IN INDUSTRY AND IN THE ARTWORK CONSERVATION FIELD.
2	Course content and Learning outcomes (Dublin descriptors)	<p>TOPICS OF THE MODULE INCLUDE: INTRODUCTION TO LIGHTING AND COLORIMETRY. ENVIRONMENT AND CONSERVATION. INTRODUCTION TO DIGITAL IMAGE PROCESSING. NON DESTRUCTIVE TESTING: IR AND UV PHOTOGRAPHY. RADIOGRAPHY. HOLOGRAPHIC INTERFEROMETRY. SPECKLE METHODS: ESPI, SPECKLE PHOTOGRAPHY, SPECKLE DECORRELATION. ULTRASONIC TESTING. INFRARED THERMOGRAPHY AND QUANTITATIVE INFRARED THERMOGRAPHY. PRACTICAL EXAMPLES. LAB SESSIONS ABOUT THERMOGRAPHY.</p> <p>ON SUCCESSFUL COMPLETION OF THIS MODULE, THE STUDENT SHOULD</p> <ul style="list-style-type: none"> - HAVE KNOWLEDGE OF SOME BASIC METHODS IN NDT, - HAVE BASIC KNOWLEDGE AND UNDERSTANDING OF MATERIALS DEGRADATION, PARTICULARLY DUE TO THE ENVIRONMENT, - DEMONSTRATE SKILL IN INFRARED THERMOGRAPHY MEASUREMENTS AND ABILITY TO CONCEIVE A PROOF; - DEMONSTRATE CAPACITY FOR READING AND UNDERSTANDING OTHER TEXTS ON RELATED TOPICS.
3	Prerequisites and learning activities	THE STUDENT SHOULD HAVE SOME BASIC NOTIONS OF HEAT TRANSFER AND OPTICAL INTERFERENCE.
4	Teaching methods and language	LECTURES AND THERMOGRAPHY PRACTICAL SESSIONS. LANGUAGE: ITALIAN (WITH SOME TEXTS IN ENGLISH) REF. TEXT BOOKS LECTURE NOTES WRITTEN BY THE TEACHER
5	Assessment methods and criteria	FINAL ORAL EXAM COMPREHENSIVE ACROSS ALL TOPICS IN THE COURSE