UNIVERSITÀ DEGLI STUDI DI TORINO

TECH4CULTURE PHD PROGRAMME

Basic Training 2020/2021

XXXVI

All the lectures will be held remotely (Webex)

General Topics:

1. Knowledge
2. Intervention
3. Management
4. Trans-disciplinarity

Date and Time	**Professor**	**Seminar's Title**	**Content and General Topic(s)**
December 3, 2020,	Alessandro Morandotti	Adventures in the History of Art. Discoversies and Disillusions	1 and 4

10-12			
December 14, 2020, 14-16	Monica Gulmini	Cooperation and synergy among researchers investigating past material records: a first-hand experience.	Contents The lecture stimulates discussion on significant examples taken from the direct experience within the BE-ARCHAEO project (hppt://www.bearchaeo.com). Educational Goals: ●Become familiar with the activation of concepts by verbal means; ●Obtain awareness of limits associated with the "sharp" disciplinary preparation of individuals engaged in multi-disciplinary teams; ●Stimulate the revision of ways of dealing to enhance cooperation in multi-disciplinary workgroups; ●Present some basic concepts in chemical analyses. 2 and 4
December 15, 2020, 11-13 / 14-16 4 hours	Vincenzo Lombardo	Introduction to Digital Sciences	Computational modeling, Data bases, CMS, Basics of semantic encoding, CMS Omeka-S, Examples and exercise 1
December 16, 2020, 14-18	Maurizio Aceto, Monica Gulmini	Coloured and colouring materials: detection of dyes and pigments through non-invasive approaches	Contents: Colour is among the features that mostly catch the eye. A number of substances have been used in the past (and still are now) to enhance the appearance of everyday objects, and to produce arworks. The recognition of colouring materials is therefore one of the tasks tackled by scientists investigating items from the cultural heritage domain (from archaeological materials to modern artworks). In this lecture, an overview of the colourants' typology in different materials will be presented. Then, the attention will be drawn on simple, fast and non-invasive techniques (Fibre Optics diffuse Reflectance Spectroscopy - FORS - and Fiber Optics Moleculard Fluorimetry - FOMF) to investigate colourants in various materials and artworks. The analysis of polychromy on materials such as paintings, pottery, glasses and textiles will be discussed, together with practical demonstrations carried out in the classroom. Educational goals:

			● acquire the basic knowledge of absorption spectrophotometry; ● acquire the basic concepts of the approach of diagnostic techniques on materials; ● acquire the skill of evaluating the pros and cons of non-invasive techniques. 1
December, 17 2020 15-17	Eliano Diana	The Meaning of Intervention in the Cultural Heritage	This section focuses on the meaning of intervention in cultural heritage in a broad sense. Intervention is intended as any action which leads to a modification of material aspects or contexts. Intentional or unintentional actions may affect heritage as a whole, with positive or negative effects. Positive interventions such as preservation, rehabilitation, conservation, restoratio and reconstruction are also common practices of ongoing maintenance. Some important ethical and technical guidance of intervention will also be considered. 2
January 13, 2021, 14,30-17,30	Alberto Castellero, Paola Rizzi	Metallic materials: techniques of investigation and case studies	Metallic materials contain, written in their microstructure, the history of their production and use. The archaeometallurgist, being an expert of the modern metallurgy, can highlight the secrets hidden in the ancient objects. The goal of the seminar is to describe a few production techniques used in antique and to address the scientific techniques that can be used to study the ancient metallic materials, i.e. SEM, XRD, optical microscopy, hardness. Two case studies will help in the understanding of the possible information that can be obtained from the scientific study of metals. Educational goals: ● acquire the basic knowledge of the production techniques of metallic materials used in the past ● acquire the basic knowledge of the scientific techniques used for metallic materials investigation ● acquire the skill of evaluating which are the more useful scientific techniques for metals investigation 3

January 18, 2021 11-13	Dominique Scalarone	Methodology of conservation interventions and materials for conservation	After an introduction on the main chemical and physical mechanisms of degradation, their causes and effects on historical and artistic artefacts, the characteristics of the main types of materials (i.e. consolidants, adhesives, protective coatings) used in restoration interventions will be described, focusing on selection criteria, methods of application, mechanisms of action and evaluation of their effectiveness. 2
January 19, 2021 11-13 14-16 4hrs	Marco Giardino Zbigniew Zwolinski	Geodiversity & Geoheritage: concept, methods, case studies for enhanced cultural landscapes	Natural and Cultural diversities: an introduction - Geodiversity and cultural landscapes: theoretical concepts and specificities of case studies - Landforms assessment for geodiversity - Geoheritage: research and actions in a changing landscape - Examples of enhanced cultural landscapes within UNESCO Global Geoparks - Geodiversity knowledge and Geoheritage awareness through Multimedia solutions 2 and 3
January 21, 2021 15-17	Monica Gulmini Vito Messina	Joint efforts towards the understanding of glass production and circulation in pre-Islamic Babylonia	The lecture presents the results of a collaborative work in which archaeologists and chemists investigated a set of fragmentary glass containers - dated to the Parthian and Sasanian periods - with the aim of understanding their production and circulation. The finds were recovered during the archaeological excavations conducted by the Turin Centre for Archaeology in Middle East (CRAST) at Veh Ardashir, about 30 km south of present-day Baghdad. Veh Ardashir was one of the main cities of the Sasanian empire and was founded at the centre of a network of land and water routes connecting the Mediterranean to the Silk Roads and the Gulf. It probably overlapped, at least partially, a more ancient and smaller settlement. This is the reason why the glass containers there discovered revealed features that are characteristic of different periods and areas of production, as if the know-how they embody was the result of inputs that circulated in a loop far larger than the region in which the city was founded. Le lecture aims at 1) giving some basic knowledge on the technology of glass production; 2) introducing some approaches for the investigation of archaeological glass by means of

			instrumental analytical methods;3) acquainting the students with the definition of archaeological questions to be posed to natural scientists. 1 and 4
January 22, 2021, 14-17	Rossana Damiano	Publishing and linking data in the LOD	The aim of the lecture is to provide a gentle introduction to the representation of cultural data in the Linked Open Data. The main RDF formats (Turtle, JSON and JSON-LD) will be illustrated and the basics of the SPARQL query language will be introduced. The lecture will be based on practical examples run on publicly available data sets and endpoints. The seminar does not require any previous knowledge of databases and Linked Data technologies. 3 and 4
January 26, 2021, 14,30-16,30	Stefano de Martino	Archaeometry and Cuneiform Table	Cuneiform Tablets have always been studied only concerning their content. Notwithstanding, they are archaeological objects and hence, archaeometric analyses can offer useful information. We will also deal with the different approach of the philologists to the results of the archaeometric analyses of the clay tablets. Furthermore, the 3D images of cuneiform texts not only make the reading of the cuneiform signs easier, but also support the paleographical analysis. 4
January 27, 2021, 14-18	Alessandro Lo Giudice Alessandro Re	X-ray and nuclear techniques for material characterization in heritage science	Nuclear physics applications in medicine and energy are well known and widely reported. Less well known are the many important nuclear and related techniques used for the study, characterization, assessment and preservation of cultural heritage. There has been an enormous progress in this field in recent years. The basic concept is to use nuclear radiations of various kinds (X-ray, γ-ray, electron, neutron and ion beams) to investigate the elemental, structural and/or isotopic composition of an object. Information obtained are useful for many purposes, in particular to know the realization techniques and the conservation state of the objects, to

			identify the provenance of the raw materials, to authenticate works of art and to date materials. 1
January, 28 2021 3 pm 2 h	Vito Messina	Archaeological Theory today	4
January, 29 2021, 15-17	Fulvio Rinaudo	Metric documentation: state of art and news from Europe and ICOMOS	The metric documentation of CH assets is a crucial argument to be faced. The IT development of metric survey tools (mainly automatic but always with a big lack in accuracy assessment) push the international communities to fix some general advices of a correct use of 3D models generated by using different technologies (e.g. Seville and London charter, the new European document on digital heritage production). During the next ICOMOS GA2020 a resolution will be proposed to update the ICOMOS document on 3D metric survey (the last edition dates 1996) by considering the regional proposals to update the situation at international level. The lecture aims to explain the role metric survey in the documentation process of CH assets,to offer a short overview of the recent development of 3D metric survey technologies, their pro and cons, and the accuracy assessment strategies to be adopted from a theoretical point of view. 3 and 4

February 3, 2021 14-17	Enrica Pessione Beatrice Demarchi Sergio Fave	Biological, biochemical and biomolecular approaches to characterize archaeological items and artworks and to evaluate microbial biodeterioration.	Some aspects of microbial deterioration of different materials will be explored, spacing from stones to very recent plastic polymers. Methods for microbial identification as well as for metabolic pathway characterization will be compared. In addition, some biomolecular strategies to characterize archaeological items will be described