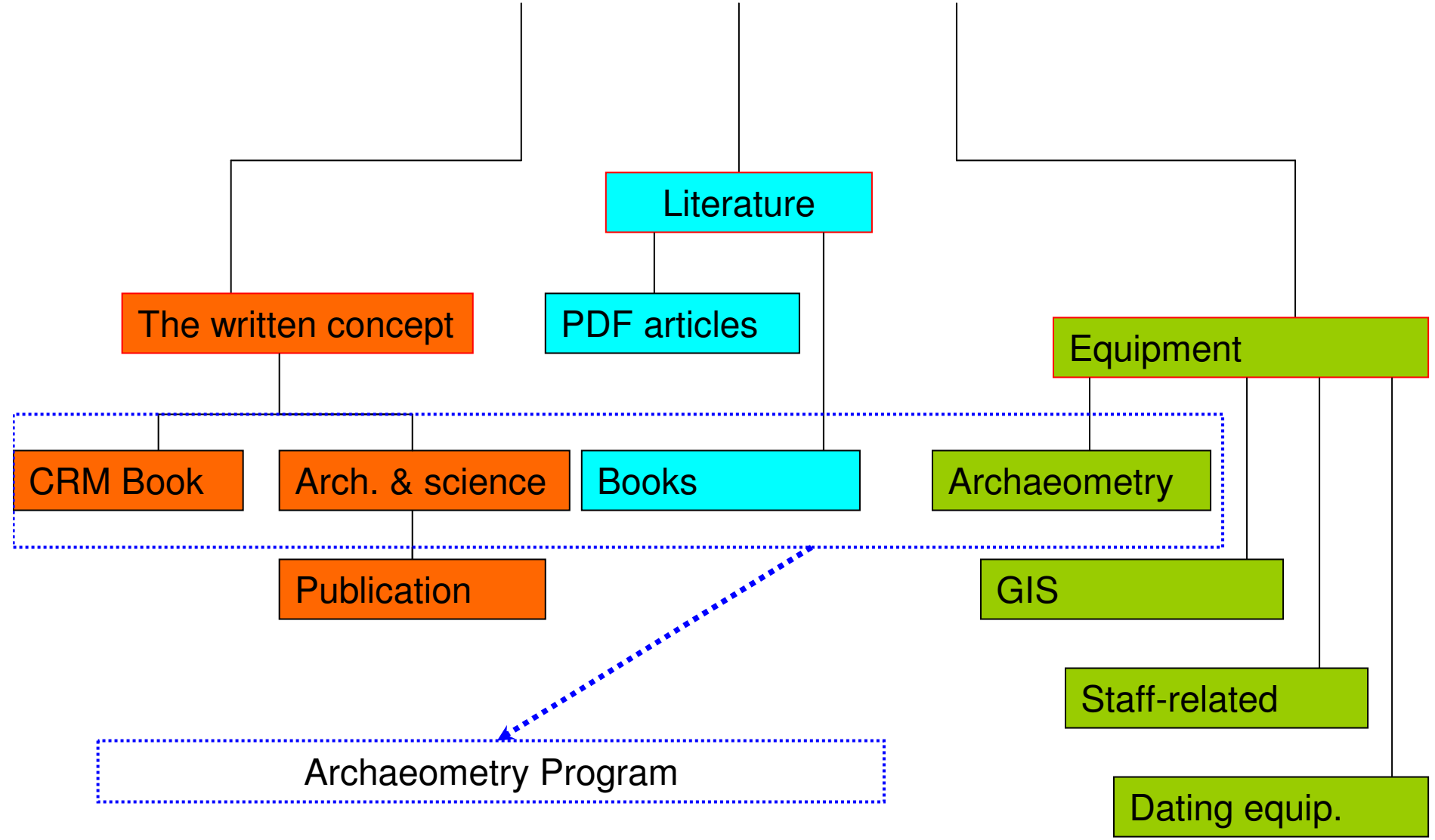


Establishing A Teaching Center for Cultural Heritage in the Hashemite Kingdom of Jordan

5a: Preparing guidelines for an integrated concept of archaeological and natural sciences.

Preparing guidelines for an integrated concept of archaeological and natural sciences.



Stage Year	From	To	Task Description	Accomplishment	
(1) 2004	24/10	31/10	Prepare a work plan	Done on time	submitted
(2) 2004	1/11	31/12	a- Identifying the needs of target groups (archaeologists and heritage sites managers), and b- Identifying the needed knowledge from natural sciences to serve in archaeology.	Done on time	submitted
(3) 2005	1/1	30/6	- Data collection regarding the needs in stage 2a and - In stage 2b. Examples: Books, articles, and maps.	Done on time	submitted
(4) 2005	1/7	31/12	-Creating 2 files: concepts of archaeological and natural science. CRM Book focuses on Jordan and embodies arch. science -Listing the topics of the seminars, exhibitions, and the public lectures according to the above needs and how they should be performed. - Give copies of the files to the work group in 4a.	Done on time	submitted
(5) 2006	1/1	30/3	Writing the final guidelines and submission.	Done on time	submitted

Assessment

- The available knowledge on archaeological and natural sciences (electronic and hard copies)
- The equipment at the laboratories
- The needed skills for the laboratory staff
- The current situation and planning for future acquisition of data, training and equipments.

1.2. The benefits of integrating archaeological and natural sciences

- The collected archaeological data are comparable to the collected data from the adjacent regions and other parts of the world.
- The ability of re-testing hypotheses in archaeology.
- The ability to address archaeological and physical components in the absence of proper ethnographical and ethnoarchaeological methods like paleoclimate studies.
- Better data sharing and data synthesis.
- The ability to improve archaeological methods frequently.
- The ability to incorporate new scientific methods in archaeology.
- The ability to test the effectiveness, reliability and accuracy of these scientific methods in the laboratory using smaller number of samples and thus eliminates the possibility of destruction; especially in conservation.
- Students and researchers would think scientifically and thus improves the quality of researches.
- The ability to reduce ethnocentrism and bias in interpreting the collected archaeological data.
- The ability to build archaeological and heritage databases; spatial and traditional.
- The ability to explore the archaeological data from wider archaeological and scientific contexts.

The Written Guidelines



- A written volume was prepared on the concept
- CRM Book on Jordan: theories, practicing, the relationship with archaeology and natural sciences.
- A published article on the integration concept:

[The Current Status of Archaeological Science in Jordan. Trends in Applied Sciences Research](#)

Trends in Applied Sciences Research

ISSN

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The Current State of Archaeological Science in Jordan

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Abstract: This study entails the current and future states of archaeological science in Jordan. It discusses the limitations and opportunities in conducting a multidisciplinary archaeological research in Jordan. It discusses the possibility of applying the advanced spatial statistics on the distribution of archaeological sites in Jordan and shows the possibility of incorporating Geographic Information System (GIS) in archaeological site modeling.

Key words: Archaeological science, Jordan, GIS, sites, spatial statistics

Introduction

Jordan as a natural museum has been opened to archaeologists and early explorers since the early 19th century. The surveys of Burckhardt (1822), Jaussen and Savignac (1909, 1914), Kraeling (1938), Glueck (1934, 1935, 1939 and 1951) and Mittman (1970) have yielded rich archaeological data and consequently became preliminary for further surveys and explorations within the country. The above

Middle Bronze Age sites were established within ample amounts of precipitation at elevations higher than 600 m above sea level.

Acknowledgements

This study was financed by the TEMPUS project "Establishing A Heritage Center in Jordan" under the category of the "integrated concept of natural sciences and archaeology", as a joint project between Yarmouk University/Jordan and Brandenburg Technical University/Germany supervised by Professor Ziad Al-Sa'ad and Professor Michael Schmidt, respectively.

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No.	Item	Procedures	Accomplishment
1	numbers of users in the GIS lab	The Faculty bought 15 new PC's with high quality specifications. The lab now has 24 PC's.	They are in use
2	version of the GIS software	25 new GIS seats were bought as well as updating the old version of the software (ArcGIS 9) which would allow 32 users at a time.	They are in use
3	geophysical unit	Scheduled in the upcoming Archaeometry project	To be done through another TEMPUS project—submitted A lab staff is currently being trained in USA in geophysics
4	books on archaeological science in electronic and hard copy forms	A list of the needed books	Ready and submitted to the main library (annex A)
5	Recent studies and advances	Collection of recent articles (PDF format) Solidifying the New Archaeology concept	Ready (annex B) A master program in archaeometry is being established (annex E)
6	The lack of proper knowledge on archaeological science especially archaeometry	-DBMS and GIS seminar -Applied sciences in archaeology	CRM book on Jordan is ready (annex C) Written concept is ready A laboratory staff is being trained in Egypt in GIS
7	Regular workshops for the laboratory staff	on recent advances in archaeological sciences and the new TL equipment	Accomplished at the lab and a lab staff will be trained in Poland for 2 months. 2 staff were trained in Egypt in photography

Courses in Arch. Science

Archaeology BA

Arch 140 Introduction to the Application of Sciences in Archaeology

Arch 340 Scientific Analysis of Archaeological Materials

Arch 342 Remote Sensing and Geophysics in Archaeology

Arch 440 Dating Methods and Chronology

Arch 441 Archaeology and Geographical Information Systems

Archaeology MA

Arch 405A Advanced Course in Applied Sciences in Archaeology

Arch 634 Modern Scientific Methods of Coins Analysis

Arch 682A Modern Methods of Surveying and Dating in Archaeology

Arch 683A Scientific Analyses of Archaeological Materials

Arch 686A Material Science for Archaeologists

Arch 690A Applied Sciences in Archaeology

Arch 694 Pottery: Raw Material and Manufacturing Techniques

Conservation BA

CM 113 Introduction to Conservation Chemistry

CRM BA

CM 613 Information Technology in Heritage Management

The Lab Unit: it ensures carrying out arch. science researches

- XRD
 - XRF
- Standards; Hy-FI → Quantitative analysis
- TL → Absolute dating
 - Accelerating Aging → Conservation purposes
 - AAS → Trace element analysis
 - GIS → Spatial database and arch. modeling
 - F-analysis → Relative dating of bones and teeth