Faculty of Archaeology and Anthropology
Department of Conservation and Management of Cultural Resources

B.A. Study Plan in Conservation and Management of Cultural Resources

The Department of Conservation and Management of Cultural Resources awards a Bachelor's degree in Conservation of Cultural Resources upon the completion of the following requirements:

- The conditions stated in the Instructions No. 6 for the year 2008 (Instructions to grant a Bachelor's degree at Yarmouk University issued under the system of granting informed consent degrees and certificates at Yarmouk University No. 76 for the year 1976).
- The University requirements (27 credit hours).
- Faculty of Archaeology and Anthropology requirements (18 Credit Hours).
- Department of Conservation and Management of Cultural Resources requirements (87 Credit Hours) as follows:

1-University Requirements: (27 Credit Hours) as follows:

1. a. Obligatory Requirements: (12 Credit Hours) as follows:

Course No.	Course Title	Credit Hours	Prerequisite.
LC 101	English Language Skills	3	
Ar. 101	Arabic Language	3	
100	Military Sciences	3	
PS 102	National Education	3	

1. b. Elective Courses (15 Credit Hours): to be chosen from the courses offered at the University, with exception of those offered by the Faculty of Archaeology and Anthropology. The student should select at least one, but not more than two courses from each group. The courses to be chosen from are listed below:

Course No.	Course Title	Credit Hours	Prerequisite.
Faculty of Human Sciences			
PE 100 A	Sports in Our Life	3	
PE 103 A	Physical Fitness for Society	3	
Des 100	Aesthetic Appreciation	3	
DA 100	Drama Appreciation	3	
His 106 A	Jerusalem 5000 Years	3	
ML 101K	Korean language and culture	3	
ML 141A	French Language	3	
ML 161A	German Language	3	
ML 171A	Spanish Language	3	
ML 181A	Russian Language	3	
Faculty of Economics and Society Sciences			
AS 100	Administration and Society	3	
Econ 100	The Economics and Jordanian Society	3	
BA 498	Managerial Skills	3	
Law 101	Human Rights	3	

Law 102	Legal Culture	3	
Sh Us 100	Islamic Culture	3	
Sh Is 100	Family System in Islam	3	
Sh Is 102	Basic Islamic Concepts	3	
Ed.Psy 100	Life Skills	3	
E.Ed 100	Basics in Child Care	3	
A&F 100	Basic Concepts in Education	3	
A&F 105 B	Information Skills	3	
Soc 103	Family Violence	3	
Geog 100	Water Resources	3	
JR 100	Communicational Culture	3	
Faculty of science and technology, agriculture, health			
Bio 100	General Health and Health Education	3	
Chem 100	Chemistry and Society	3	
Env 101 A	Environmental Sciences	3	
Phys 100	Fundamentals of Astronomy	3	
CS 109	Home Computing	3	
CIS 109	Informatics and Society	3	
MIS 109	Information Technology Services	3	
EP 100	Alternative Energy	3	
With regard to the level exam, all new students as of the first semester 2009/2010 must apply for the exam of Arabic and English language and computer. The student who fails to succeed in any of these exams must register for a remedial course (099) outside the scope of the study plan. These courses are:			
LC 099	English (Remedial)	3	
Ar 099	Arabic (1) (Remedial)	3	
CS 099	Computer Skills (Remedial)	3	

2- Faculty of Archaeology and Anthropology Course requirements (18 Credit Hours) as follows:

Course No.	Course Title	Credit Hours	Prerequisite.
Arch 101	Introduction to Archaeology	3	-
Arch 102	Origins of Civilization	3	-
Arch 105	Ancient Writings	3	-
An 101	Introduction to Anthropology	3	-
CM 101	Introduction to Conservation and Management of Cultural Resources	3	-
CIS101 A	Computer Skills (2)	3	-

3- Department course requirements: (87 Credit Hours):

3.A. Single major course requirements (87 Credit Hours):

3.A.a. Obligatory courses (69 Credit Hours)

Course No.	Course Title	Credit Hours	Prerequisite.
CM 102	Fundamentals of Cultural Resources Management	3	-
Chem 103	General Chemistry	3	-
Geo 103	General Geology	3	-
CM 112	Introduction to Conservation Science	3	CM 101
CM 113	Introduction to Conservation Chemistry	3	Chem 103
CM 114	Introduction to Museum Studies	3	CM 101
CM 201	General Techniques of Object Conservation	3	CM 101
CM 204	Organic Archaeological Material Science and Technology	3	CM 101
CM 205	Inorganic Archaeological Material Science and Technology	3	CM 101
CM 210	First Aid for Archaeological Finds	3	CM 112
CM 230	Deterioration of Archaeological Materials	3	CM 113
CM 240	Drafting and Photographic Techniques	3	CM 101
CM 301	Conservation Materials	3	CM 101, CM 113
CM 310	Preventive Conservation	3	CM 112
CM 320	Traditional Building Techniques and Typology	3	CM 230
CM 330	Conservation of Ceramics and Glass	3	CM 301
CM 340	Conservation of Metals (1)	3	CM 301
CM 350	Architectural Conservation (1)	3	CM 230
CM 401A	Conservation of Mosaics	3	CM 112
CM 440	Conservation of Metals (2)	3	CM 340
CM 449	Laboratory and Field Evaluation of Stone Conservation Materials	3	CM 350
CM 450	Architectural Conservation (2)	3	CM 350
CM 460	Conservation of Wall Paintings and Plasters	3	CM 112

3.A.b. Elective courses (18 Credit Hours) to be chosen from the following courses:

Course No.	Course Title	Credit Hours	Prerequisite.
101	General Biology	3	-
Env 103	General Environmental Sciences	3	-
CM 220	Heritage Legislation and policy	3	CM 101
CM 302	Technical Examination of Archaeological Materials	3	CM 101
Arch 120	Introduction to Classical Archaeology	3	Arch 101
Arch 341	Environmental Archaeology	3	Arch 101
An 446	Anthropology of Rural and Urban Communities	3	An 101
An 285	Public Heritage	3	-
CM 370	Conservation of Paper and Papyrus	3	CM 112
CM 380	Conservation of Bone and other Skeletal Materials	3	CM 112

CM 405A	Roofing and Metals in Historic Buildings	3	CM 230
CM 410	The Conservation of Brick Buildings	3	CM 201
CM 420	The Socio-Economics of the Conservation of Historic Buildings	3	CM 350
CM 430	Conservation of Textile, Leather and Parchment	3	CM 112
CM 499	Special Topics in Conservation and Restoration	3	CM 350
Arch 140	Introduction to Applied Sciences in Archaeology	3	Arch 101
CM 360	Plaster, Sculpture and Replication Works	3	CM 201
An 121	Human Ecology	3	-
Arch 441	Geographic Information Systems and their Archaeological Applications	3	Arch 140
Arch 440	Dating Methods and Chronology in Archaeology	3	Arch 140
An 220	Bone Science	3	An 101

Any obligatory course offered by the Department of Anthropology and Department of Archaeology.
Any course offered by the Departments of Chemistry, Physics, Earth Sciences and Environmental Studies, Biology, History, Geography, Faculty of Economic and Administrative Sciences, Faculty of Arts and Faculty of Law.

Major/Minor course requirements (87 Credit Hours):
Students who follow this plan can have their major in conservation of cultural heritage and their minor in the following: Archaeology, Anthropology, Chemistry, Earth Sciences and Environmental Studies, Public Administration, Law, English Language and Modern Languages.

3. B. Major in Conservation of Cultural Resources courses (66 Credit Hours):

3.B.a. Obligatory Courses (57 Credit Hours):

Course No.	Course Title	Credit Hours	Prerequisite.
CM 102	Fundamentals of Cultural Resources Management	3	-
Chem 103	General Chemistry	3	-
Geo 103	General Geology	3	-
CM 112	Introduction to Conservation Science	3	CM 101
CM 113	Introduction to Conservation Chemistry	3	Chem 103
CM 114	Introduction to Museum Studies	3	CM 101
CM 201	General Techniques of Object Conservation	3	CM 101
CM 204	Organic Archaeological Material Science and Technology	3	CM 101
CM 205	Inorganic Archaeological Material Science and Technology	3	CM 101
CM 210	First aid for Archaeological Finds	3	CM 112
CM 230	Deterioration of Archaeological Materials	3	CM 113
CM 240	Drafting and Photographic Techniques	3	CM 101

CM 301	Conservation Materials	3	CM 101, CM 113
CM 310	Preventive Conservation	3	CM 112
CM 320	Traditional Building Techniques and Typology	3	CM 230
CM 330	Conservation of Ceramics and Glass	3	CM 301
CM 340	Conservation of Metals (1)	3	CM 301
CM 350	Architectural Conservation (1)	3	CM 230
CM 449	Laboratory and Field Evaluation of Stone Conservation Materials	3	CM 350

3.B.b. Elective Courses (9 Credit Hours) to be chosen from the following courses:

Course No.	Course Title	Credit Hours	Prerequisite.
CM 370	Conservation of Paper and Papyrus	3	CM 112
CM 380	Conservation of Bone and other Skeletal Materials	3	CM 112
CM 401A	Conservation of Mosaics	3	CM 112
CM 405A	Roofing and Metals in Historic Buildings	3	CM 230
CM 410	The Conservation of Brick Buildings	3	CM 201
CM 420	The Socio-Economics of the Conservation of Historic Buildings	3	CM 350
CM 430	Conservation of Textile, Leather and Parchment	3	CM 112
CM 460	Conservation of Wall Paintings and Plasters	3	CM 112
CM 499	Special Topics in Conservation and Restoration	3	CM 350
An 285	Public Heritage	3	-
An 446	Anthropology of Rural and Urban communities	3	An 101
Arch 441	Geographic Information Systems and their Archaeological Applications	3	Arch 140

3.C. Minor (21 Credit Hours) according to minor course listing of each specified Department.

Course requirements for minor in Conservation of Cultural Resources (21 Credit Hours):

3.C.a. Obligatory courses (15 Credit Hours):

Course No.	Course Title	Credit Hours	Prerequisite.
CM 101	Introduction to Conservation and Management of Cultural Heritage	3	-
CM 112	Introduction to Conservation Science	3	CM 101
CM 201	General Techniques of Object Conservation	3	CM 101
CM 230	Deterioration of Archaeological Materials	3	CM 113
CM 310	Preventive Conservation	3	CM 112

Note: For students from the Faculty of Archaeology and Anthropology, CM 101 is replaced by CM 114.

3.C.b Elective courses (6 Credit Hours) to be chosen from the following courses:

Course No.	Course Title	Credit Hours	Prerequisite.
CM 220	Heritage Legislation and Policy	3	CM 101
CM 302	Technical Examination of Archaeological Materials	3	CM 101
CM 370	Conservation of Paper and Papyrus	3	CM 112
CM 401A	Conservation of Mosaics	3	CM 112
CM 410	The Conservation of Brick Buildings	3	CM 201
CM 460	Conservation of Wall Paintings and Plasters	3	CM 112
CM 499	Special Topics in Conservation and Restoration	3	CM 350

Courses Description

CM 101 Introduction to Conservation and Management of Cultural Heritage
This course introduces students to the various types of cultural resources. It deals with the general policies, strategies and techniques that should be used for the preservation and management of cultural heritage. The course emphasizes the role that cultural heritage can play in the sustainable development.

CM 112 Introduction to Conservation Science
This course introduces the students to the basic aims, concepts and theories of the conservation process and the conservation practice. Preventive and active conservation approaches are covered in this course.

CM 113 Introduction to Conservation Chemistry
This course provides a unified introductory course in chemistry as related to nature of archaeological materials and conservation materials and methods. Topics covered are atomic structure and chemical periodicity, bonding, oxidation and reduction, acids and bases, solubility theory, structure and functionality in organic chemistry.

CM 114 Introduction to Museum Studies
This course explores the basic theories of museum work: history, mandate, roles, organization, and the interaction of the various museum activities. The course covers in addition to history and archaeology museums other kinds of museums such as the natural history and science museums.

CM 201 General Techniques of Object Conservation
This course introduces the general techniques and methods used for the retrieval of artifacts and the associated information from a deposit, marking and labeling artifacts, *in situ* consolidation and molding, packaging, transportation, examination, cleaning and long-term stabilization and preservation. The course includes practical lab and field training on these techniques.

CM 204 Organic Archaeological Material Science and Technology
This course will examine the composition, structure and properties of artifacts of organic origin such as wood, paper, textile, leather and proteinaceous materials. The history of these materials and the technology and fabrication techniques used to create artifacts will also be studied in this course.

CM 205 Inorganic Archaeological Material Science and Technology
This course will examine the composition, structure and properties of artifacts of inorganic origin such as metals, ceramics, glass and stone. The history of these materials and the technology and fabrication techniques used to create artifacts will also be studied in this course.

CM 210 First Aid for Archaeological Finds
This course covers the techniques, methods and materials used in the field for the preservation of newly excavated archaeological materials whether of organic or inorganic origin. *In situ* condition assessment, recording, cleaning and protection techniques will be covered.

CM 220 Heritage Legislation and Policy
The course explores how legislation and adopted policies for heritage protection has evolved up to the present point in Jordan and the neighboring countries. The course also explores legislation and policy for the heritage in an international perspective through an overview of those adopted by the international organizations such as ICOMOS; ICCROM; UNESCO; World Heritage Sites; Council of Europe. Case studies and examples chosen from some developed countries will be provided.

CM 230 Deterioration of Archaeological Materials
This course covers the causes and mechanisms of the deterioration and degradation of various types of organic and inorganic archaeological materials. The deterioration process of archaeological objects in burial environments, the immediate deterioration caused by excavation and the long term deterioration in museum and storage will be discussed in this course.

CM 240 Drafting and Photographic Techniques
This course introduces the principles and techniques of free and geometric drawing and ordinary and digital photography. The use of computer in drawing and image processing is covered. The application of these techniques in the conservation of materials and buildings is emphasized. The course is supported by laboratory training and field application.

CM 301 Conservation Materials
This subject covers the physical-organic chemistry of everyday commercial products and proprietary formulations that are used in research, analytical and cultural heritage conservation laboratories. It examines relationships between the chemical structure, properties and uses of solvents, detergents, adhesives, paints, consolidants, fibers, stabilizers, emulsifiers, preservatives and photo-chemicals. The course includes practical training in the lab.

CM 302 Technical Examination of Archaeological Materials
This course covers the techniques and methods used for analyzing various types of archaeological information to obtain information about the chemical composition, raw materials and manufacturing technology. The course discusses the chemical, microscopic and spectroscopic techniques used for the analysis of archaeological materials. Topics covered include sampling, sample treatment, analysis, quality assurance, evaluation and reporting of the results, quality assurance, treatment of data, volumetric analyses, absorption and emission spectrophotometry, potentiometry, chromatography, electron microscopy and X-ray diffraction.

CM 310 Preventive Conservation
Students will learn to identify the possible risks to collections, determine when objects are indeed at risk, and recognize and control major risks such as active corrosion on metals, mold and other pests, and the human element. Visual inspections and monitoring RH will be discussed, along with storage environments for archaeological objects, and package and support materials for collections. Conditions unique to archaeology materials, such as contamination from burial environments and potentially hazardous degradation of materials in storage, will also be covered.

CM 320 Traditional Building Techniques and Typology
This course introduces the students to traditional building techniques used in Jordan and the region. The course focuses on the characteristics of a building style as a reflection of social, economic and technological change. The course emphasizes the process of analytical recording and aims at achieving a clear understanding of the construction and typology of buildings as a necessary precursor to decision making.

CM 330 Conservation of Ceramics and Glass
This course will provide students with the basic knowledge and skills required to document and treat ceramic and glass artifacts. The general topics covered in the course may include: methods of examination and documentation, cleaning, surface coatings, adhering, consolidation, gap-filling/replacements, and restoration. The course will include practical training.

CM 340 Conservation of Metals (1)
This course introduces the students to structure and properties of iron and copper, their smelting and refining techniques, alloys, fabrication techniques and corrosion causes and mechanisms.
This course focuses on the methods and techniques adopted for the conservation and stabilization of archaeological objects made of iron and its alloys and copper and its alloys that have been excavated from different burial environments.

CM 350 Architectural Conservation (1)
This course covers the physical and chemical properties of historic building materials (stone, cementing materials, plaster, their deterioration mechanisms, and strategies for assessing conditions, conserving and rehabilitating historic resources.

CM 370 Conservation of Paper and Papyrus
This course covers the techniques, methods and materials used in the active and passive conservation of materials made of paper and papyrus. The course includes practical training and demonstrations.

CM 380 Conservation of Bone and other Skeletal Materials
This course covers the techniques and methods used in the examination; cleaning, active and passive stabilization of artifacts made of bone, antler, ivory and associated materials. The course includes practical training and demonstration.

CM 401A Conservation of Mosaics
This course covers the nature of materials and technology used in making mosaic pavements and walls, deterioration process of mosaics, assessment procedures, cleaning and conservation materials and techniques.

CM 405A Roofing and Metals in Historic Buildings
This course enables the students to achieve a detailed understanding of the history and construction of roofs and their cladding materials leading to the most appropriate conservation techniques. Metals are also approached from the point of view of this history of usage, science of corrosion, and thus the most appropriate conservation methodologies.

CM 410 The Conservation of Brick Buildings
This course explores the historical use of burnt materials in building culture. It covers the nature and properties of bricks and terracotta, deterioration, conservation and preservation policies, techniques and materials.

CM 420 The Socio-Economics of the Conservation of Historic Buildings
This course discusses the way in which financial and economic aspects affect conservation of the historic environment, the ways in which ethical and philosophical issues affect judgments which may be crucial to our stewardship of the earth's resources. The role of government and non-government agencies in formulating the conservation policy and practice will be covered.

CM 430 Conservation of Textile, Leather and Parchment
This course covers the techniques, methods and materials used in the active and passive conservation of textile, leather and parchment and other related materials. The course includes practical training and demonstrations.

CM 440 Conservation of Metals (2)
This course introduces the students to structure and properties of gold, silver tin and lead, their smelting and refining techniques, alloys, fabrication techniques and corrosion causes and mechanisms. This course focuses on the methods and techniques adopted for the conservation and stabilization of archaeological objects made of gold and its alloys, silver and its alloys, tin and its alloys and lead and its alloys. The course will be supported by practical training and demonstrations.

CM 449 Laboratory and Field Evaluation of Stone Conservation Materials
This course introduces the students to the requirements that a proper stone consolidants, stone repair material and a stone hydrophobing material should fulfill. The internationally adopted laboratory and field testing and evaluation methods of these materials will be covered. The course will include laboratory and field training.

CM 450 Architectural Conservation (2)
This course focuses on techniques and materials used in archaeological and historic buildings and stone monuments consolidation and repair. Masonry consolidants, removal of soluble salts, stone cleaning methods and water-repellent treatments are covered in this course.

CM 460 Conservation of Wall Paintings and Plasters
This course covers the composition, decay, cleaning, conservation and protection of wall paintings, frescos and plasters. The course includes laboratory and field training.

CM 499 Special topics in Conservation and Restoration
To be determined by the instructor.

An 101 An Introduction to Anthropology
This course consists of an exposition of the various branches of anthropology and their links with the economic, cultural, political, and educational aspects of human life. It nevertheless, explains topics such as human genetics and evolution, races, and environmental adaptation. Besides, it discusses social anthropology, its methodology, goals, its relations with other sciences and its several theoretical and practical areas.

Arch 101 Introduction to Archaeology
This course provides an introduction to the theory, methods and aims of archaeology, in addition to the relation of archaeology to history, art, science and other disciplines. In this course students examine archaeology and professional ethics; archaeology as public interest; and legal organizations of archaeology.

Arch 102 Origins of Civilization
The comparison of origins and institutions of civilizations in the old and new worlds, including the first state-organized societies of Mesopotamia, Egypt, Levant, the Indus Valley, China, the Aegean, Mesoamerica, and Peru.

Arch 105 Ancient Writings
The course aims at giving a general idea about the invention of writing in the Ancient Near East and its development. This includes the pictographic, syllabic and alphabetic writing systems (Sumerian, Akkadian, Egyptian, Canaanite, Aramaic, Ancient South and North Arabic along with the related dialects). The development of writing will be illustrated through examples of inscriptions presented in chronological order. The course discusses also the contents of the inscriptions giving examples of inscriptions with religious, historical and votive contents.

Arch 340 Scientific Analysis of Archaeological Materials
This course acquaints the student with a number of analytical techniques and methods, which are useful in the investigation of organic and inorganic archaeological materials. It provides a theoretical introduction as well as practical experience on a selection of methods. The potentials and limitations of methods are discussed through specific case studies.

Arch 341 Environmental Archaeology
The course focuses on how people have interacted with their environments and have used resources in the past. Topics such as human-environmental dynamics (history and theory), environmental change and human responses, people and natural resources and changing environments and resources in a long-term perspective are discussed in this course.

Chem 103 General Chemistry
Periodic table of the elements, stoichiometry, reactions in aqueous solutions, atomic structure, chemical bonding, inter-molecular attractive forces.

CIS 101A: Computer Skills (2)
The main objective of this course is to provide students with the skills needed to use personal computer applications in real life. It covers a range of topics including: the basic concepts in building database applications using Microsoft Access, information presentation using MSPower Point, develop and design web pages using MS Front Page, information access and email using the Internet and statistical analysis using SPSS.

Env 103 General Environmental Sciences
This course presents the basic concepts of environmental science. It focuses on the major natural Eco systems and wild life.

Geo 103 General Geology
This course deals with the relationships between geology and archaeology.
The course discusses rocks, their types and properties, minerals, clay and their uses in archaeology, weathering and erosion stratigraphy, geological epochs, like emphasis on the Quaternary earthquakes and volcanoes.