



MODULE: STONE & MORTAR CONSERVATION (BLENDED LEARNING MODE)

SMC05PGD (8 Credits)

Recommended duration for completion:
5 ½ WEEKS Theory (distance learning) + 1 WEEK Resident, Practical Contact session

THE SOUTH AFRICAN INSTITUTE FOR HERITAGE SCIENCE & CONSERVATION

*Provisionally registered with the Department of Higher Education and Training as a private higher education institution under the Act.
Registration certificate No. 2018/HE07/007 - valid until 31/12/2023*

CAMPUS DRIVE, TWEE RIVIERE, SOUTHERN CAPE REGION, SOUTH AFRICA

Tel: +27 (0)42 273 1567 | info@sainst.org | www.sainst.org



STONE & MORTAR CONSERVATION

Enrollment category: Special Student (*retaining potential for transition to programme standing, and graduation*)
8-credit module

Content & Themes

Video tutorials, guidance & mentorship, demonstrations and practical sessions:

- practical on site survey of a building façade/installation – requiring material identification as well as condition and damage analysis.
- chemical and poultice cleaning, as well as the necessary equipment to obtain clearance of the applied materials.
- mechanical cleaning which includes air-abrasion, pressurized steam, mists and water cleaning.
- consolidation with polymers and mineral solutions followed by methods of adhesion – both mechanical, mortar and polymer based.
- cornice/string course profiles involving profile gauges and measuring.
- working with mortars: aggregates, binders and water content. Curing and house-keeping to facilitate the development of hardness in the mortar and reduce cracking.
- polymer resins, textural finishing & colour integration.
- preventive measures and maintenance.
- Treatment specifications and COSHH sheets.

Module Purpose

The module, *Introduction to Stone & Mortar Conservation*, is designed to provide students with the foundational skills and ethical background required for the analysis and treatment of damaged stone & mortar, artefacts and installations. These skills will equip the student with the capacity to identify causes of damage and deterioration as well as sufficient knowledge to identify stone, mortar formulations and finishes. The student will receive instruction regarding ideal environments for maintenance, storage and display in order to prevent or delay deterioration of intact as well as fragile material. These attainments are required to aid treatment decisions and implementation, as well as recommendations regarding the maintenance, storage, display and handling of the material.

Demonstrations and practical sessions will provide the necessary training in interventive practices. Students will learn how to employ tools, materials and equipment safely, as well as receive instruction in the safe disposal of hazardous materials.

Further to the treatment of damaged and/or fragile stone and mortar artefacts and structures, the students will acquire skills in condition and damage assessment, the compilation of instructive and helpful reports which record the results of trials, analysis and specify maintenance and treatment. Additional information regarding storage and general atmospheric environments, handling, display, health and safety is also to be included in the report.

The module(s) specifically linked to this subject are *Conservation Theory & Skills* and *Conservation in the Built Environment*.

Learning Outcomes

On completion of this module, the student should be able to:

1. have a firm understanding of the Code of Ethics and be able to perform all conservation interventions in accordance with this code.
2. select, execute and record the results of the appropriate chemical tests and trials with which stone and mortars are characterised.
3. identify, through visual, physical and chemical examination, types of damage and causes of deterioration, employing the appropriate tools, equipment and instruments.
4. intelligibly document and record all findings and proposed treatment in order to produce an instructive and comprehensive, illustrated condition and treatment specification.
5. be informed and compliant of health & safety requirements of tools and materials employed.
6. perform the selected treatments, employing equipment, tools and materials from a range of options without causing physical or aesthetic damage, or obscuring/removing historically significant information.
7. identify the pertinent aspects which contribute to deterioration and damage of stone, mortars and associated finishes, in order to be able to prescribe preventive conservation measures.
8. suggest appropriate instruments, tests and devices to measure and assess these aspects.
9. prescribe measures to safeguard the heritage material against damage and deterioration through inappropriate use, storage, handling and display.

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PRESCRIBED MODULE STUDY MATERIAL (provided):

Ashurst, J. and Dimes, F. G. (2011) *Conservation of Building & Decorative Stone*. New York: Routledge.

RECOMMENDED READING:

- Epoxy resins in stone conservation by C. Selwitz
- Stone conservation. Principles and practice by A. Henry (Ed)
- Conservation of reinforced concrete structures damaged by carbonation induced corrosion by means of electrochemical realkalization by L. Bertolini.
- The investigation and repair of historic concrete by S. Macdonald.
- Building limes in conservation by I Brocklebank.
- Elements of archaeological conservation by J.M. Cronyn
- English Heritage. Practical building conservation: Stone by D Odgers and A Henry.
- English Heritage. Practical building conservation: Concrete by D Odgers.
- English Heritage. Practical building conservation: Mortars Renders & Plasters by A Henry and J Steward

TEACHING & LEARNING METHODS:

On-line: Synchronous online video conference meetings shall feature, during which lectures and tutorials shall be presented, resulting in interaction between tutors and student. Ongoing direction and instruction shall follow, requiring reading, self-study and assignments to be submitted. The formative coursework shall account for 40% of the total mark.

Contact block session: Presented on-campus at the Institute's conservation laboratory, these sessions shall provide for practical execution and implementation of all remedial, interventive treatments emerging from the theoretical content.

A final summative assessment shall conclude this *Introduction to Stone & Mortar Conservation* module. The summative coursework shall account for 60% of the total mark.

The pass mark for Introduction to Stone & Mortar Conservation is 55%

In the case of candidates meeting the enrolment prerequisites for the Postgraduate Diploma "*Technical Conservation Studies*", credits achieved upon completion of Introduction to Stone & Mortar Conservation may, upon application, successfully transfer towards attainment of a future graduation.

COURSE DETAILS

Enrolment prerequisites

- Chemistry, at least on 1st year level OR an approved Chemistry bridging course, successfully completed.
- Successful registration for the following module: Conservation Theory & Skills (CTS01PGD)

Course fee

R9 920.77 (VAT Exempt)

Prescribed textbooks

R1 459.95 (excl. VAT) (excl. shipping)

Tuition Tool-kit

R 685.00 (excl. VAT) (excl. shipping)

A progress report will follow upon completion.