

National Chia-yi University Syllabus
Department of Forest Products Science & Furniture Engineering,
Fall Semester, Academic Year 2010

Course: Micro bio-deterioration and Prevention of Cultural Relics.	Credit:2	Hours:2
Class: Grade 3 of DFPS (A02-211)	<input type="checkbox"/> Required, <input checked="" type="checkbox"/> Elective	
Instructor: Tsang-Chyi Shiah	E-mail: tcsiah@mail.ncyu.edu.tw	
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I. Course Description:

Precious paper-based articles are the most common collections in museums of Taiwan. Both of organic and inorganic artifacts are easily degraded by microorganisms during long-time unsuitable storage. When severely degraded paper relics become brittle and broken, some improvement and strengthening methods to recover the properties of these molded papers must be considered.

This course contains : how to control storage condition including temperature, relative humidity, light strength and air pollution of paper artifacts to avoid the micro-biodegradation of paper artifacts.

The course tries to deal with a mould infestation in a heritage collection — be it an archive, library, museum, or gallery and to figure out the cause of bio-deterioration and find the ways to prevention.

The aim of this course is to carry students into the interesting world of paper-based cultural properties and learning the science of paper conservation.

II. Teaching Objectives:

The aim of this course is to carry students into the interesting world of paper-based cultural properties and learning the science of paper conservation.

III. Class Schedule

Week	Date	Topic/Activity	Reading/Assignment
1		Introduction for microorganism aging on cultural properties.	
2		Introduction for microorganism aging on cultural properties.	
3		The mechanism of fungi growth on cultural properties.	
4		The mechanism of fungi growth on cultural	

	properties.
5	Fungal growth on paper-based artifacts. (prevention & treatments)
6	Fungal growth on paper-based artifacts. (prevention & treatments)
7	The bio-deterioration of wood-based materials.
8	The bio-deterioration of wood-based materials.
9	Middle exam.
10	The micro-biodegradation of paper artifacts and treatment methods
11	The micro-biodegradation of paper artifacts and treatment methods
12	The micro-biodegradation of paper artifacts and treatment methods
13	The bio-deterioration of wall painting.
14	The bio-deterioration of wall painting.
15	The bio-deterioration of stone-based artifacts.
16	Experiment of fungi growth on cultural relics.
17	Experiment of fungi growth on cultural relics.
18	Final exam

IV. Evaluation :

Attendance 30 %, Test or exercise 30 %, Presentation 40%.

V. References :

- 1. Barnett, H.L. and B.B. Hunter (1987) Illustrated Genera of Imperfect Fungi. Fourth Edition, Macmillan publishing company, New York.**
 - 2. B. Konstanze (1992) Conservation concerns, Smithsonian Institution Press, Washington and London.**
 - 3. Nyuksha, Ju. P. (1994) The biodeterioration of paper and books. "Recent Advances in Biodeterioration and Biodegradation". Garg, K.L., N. Garg and K.G. Mukerji Eds. Vol. I : India.**
 - 4. J. S. Mills and R. White (1994) The organic chemistry of museum objects, Scientific Department, The National Gallery, London.**
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