SIMON FRASER UNIVERSITY

S.75-68

MEMORANDUM

To SENATE	From SENATE COMMITTEE ON UNDERGRADUATE STUDIES
Subject NEW COURSE PROPOSALS - ARCHAEOLOGY	Date APRIL 16, 1975

MOTION 1: "That Senate approve, and recommend approval to the Board of Governors, the new course proposals as set forth in S.75-68, for

ARC. 333-3 - Special Topics in Archaeology I
ARC. 365-5 - Ecological Archaeology
ARC. 376-5 - Quantitative Methods in Archaeology."

If the above motion is approved,

MOTION 2: "That the normal two semester time lag requirement be waived in order that ARC. 376 may be first offered in the Fall Semester 1975."

SIMON FRASER UNIVERSITY

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject

Date 16th April, 1975

At its meeting of 25th March, the Senate Committee on Undergraduate Studies discussed the attached proposals for:

Archaeology 333-3: Special Topics in Archaeology;
Archaeology 365-5: Ecological Archaeology; and
Archaeology 376-5: Quantitative Methods in Archaeology.

These courses are now forwarded to Senate for its consideration, with the Committee's recommendation that they be approved.

The Committee approved these proposals with a number of minor revisions which have been incorporated into the course proposal forms. It should also be noted that two additional courses, Archaeology 410-4: Advanced Archaeometry and Archaeology 411-5: Archaeological Dating, were returned to the Department for clarification and amplification of the proposals.

The Committee also recommends that, should these proposals be accepted by Senate, a second motion waiving the normal two-semester time lag requirement in the case of Archaeology 376 be approved to enable it to be offered in the Fall semester, 1975.

I. Mugridge

ams

att.

SCUS 75-17

(See Section B)

SIMON FRASER UNIVERSITY

MEMORANDUM

Mr. H.M. Evans, Registrar	From W.A.S. Smith, Dean Faculty of Arts
Subject New Course Proposals - ARCHAEOLOGY	Date March 10, 1975

The Faculty of Arts has approved by referendum ballot the following new course proposals. Would you please place these on the agenda of the next SCUS meeting.

A. ~~ENGLISH LOWER DIVISION CURRICULUM REVISION~~

English 100-3, Writing
English 101-3, Introduction to Fiction
English 102-3, Introduction to Poetry
English 103-3, Introduction to Drama
English 204-3, Literature of the Middle Ages and Renaissance
English 205-3, Literature of the Late Renaissance and Enlightenmen
English 206-3, Literature of the Romantic and Victorian Periods
English 221-3, Canadian Literature
English 222-3, American Literature
English 226-3, Ancient Literature in Translation
~~English 227-3, Post-Classical Literature in Translation~~

B. Archaeology 333-3, Special Topics in Archaeology I
Archaeology 365-5, Ecological Archaeology
Archaeology 376-5, Quantitative Methods in Archaeology
~~Archaeology 410-5, Advanced Archaeometry~~
~~Archaeology 411-5, Archaeological Dating~~

C. ~~Archaeology 895-5, Special Topics in Archaeology~~

Thank you.

W.A.S. Smith

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. P. Hobler,
Chairman, Department of Archaeology

From: C. L. Kemp,
Biological Sciences

Subject:

Date: April 3, 1975

The proposal course ARC 365 - Ecological Archaeology has been reviewed by the Department of Biological Sciences. ARC 365 does not significantly overlap with the courses presently offered in the Biology department. Thank you for bringing this course to our attention.

Sincerely,

C. L. Kemp,
Chairman, DUCC
Biological Sciences.

CLK/mf

C92-14

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Archaeology

Abbreviation Code: ARC **Course Number:** 333 **Credit Hours:** 3 **Vector:** 2-1-0

Title of Course: SPECIAL TOPICS IN ARCHAEOLOGY I

Calendar Description of Course:

This course will be offered from time to time to meet special needs of students and to make use of specializations of visiting faculty members.

Nature of Course This will be a lecture and seminar course with variable format depending upon faculty members teaching it and subject matter covered within it.

Prerequisites (or special instructions): Lecture/Seminar

What course (courses), if any, is being dropped from the calendar if this course is approved:

None

2. Scheduling

How frequently will the course be offered? As needed, presumably about once a year.

Semester in which the course will first be offered? 76-3

Which of your present faculty would be available to make the proposed offering possible? Most of our present faculty could use a course like this to present a special topic for which there might be insufficient demand to warrant institutin a regular scheduled course.

3. Objectives of the Course

The course will broaden our curriculum by permitting the offering of special topics, particularly by visiting faculty members.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	None
Audio Visual	None
Space	None
Equipment	None

Faculty of Arts
JAN 31 1975
Office of the Dean

5. Approval

Date: Jan 24, 1975

Department Chairman | Dean | Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a.

SIMON FRASER UNIVERSITY

MEMORANDUM

To W.A.S. Smith,
Dean of Arts

From P. M. Hobler, Acting Chairman
Department of Archaeology

Subject Archaeology Special Topics

Date January 30, 1975

According to your request, I have listed below some of the topics that might be taught under our proposed Special Topics course. These are by no means the only subjects that might be taught, nor do we wish to be held to having to teach each of them. They are simply examples of what might be covered.

Asian Prehistory

Oceanian Prehistory

European Prehistory

Ethnoarchaeology

Zooarchaeology

Experimental Archaeology

Primitive Technology

Museology

Conservation Archaeology

Pre-Columbian Art

Prehistoric and Primitive Art of Asia.

Prehistoric and Primitive Art of Oceania

Prehistoric and Primitive Art of Africa

Prehistoric and Primitive Art of North America

Human Paleoecology

Specific Problems in fossil man - for example, the Australopithicines, or the Neanderthals.

PMH:inb

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Archaeology

Abbreviation Code: ARC Course Number: 365 Credit Hours: 5 Vector: 0-4-0

Title of Course: Ecological Archaeology seminar

Calendar Description of Course: Deals with the techniques for reconstruction of past environments, as well as the effect of environment on past settlements and people. Environment as considered in the course will encompass the presence of other settlements, and deal with relationships between settlements.

Nature of Course Seminar

Prerequisites (or special instructions ARC. 101

What course (courses), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? at least once every two years

Semester in which the course will first be offered?

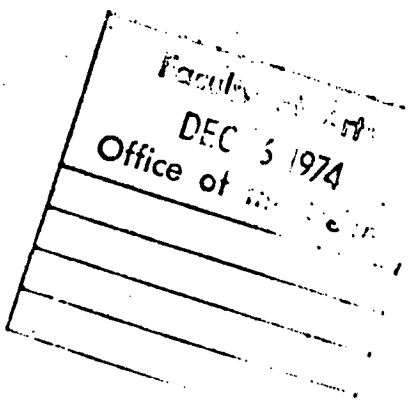
Which of your present faculty would be available to make the proposed offering possible?

3. Objectives of the Course The course will deal in detail with past environments, and principles of interaction with the physical environment which determine settlement characteristics. Important emphasis will be placed on settlement pattern studies, and theory of settlement interactions as well as settlement succession stages, states of equilibria and change. Effects of population densities on prehistoric settlements and qualitites of life will also be an integral part of the course.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	None L. Thomas
Audio Visual	None
Space	None
Equipment	None



5. Approval

Date Dec 6, 1974

Department Chairman

Dean

Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a

COURSE OUTLINE:

I. General principles of ecological archaeology: energy

II. General principles of ecological archaeology: ecosystems

III. System boundaries and cultural properties

IV. Population vs. resources: demography: detection in the archaeological record

V. Beating the system: economic alliances, kinship alliances and social alliances: implications for material goods and genetic clines

VI. Medical anthropology and epidemiology

VII. Effects of stress

VIII. Hunter/gathers: past and present

IX. Horticulturalists and food production: problems for the archaeologist

X. Agriculturalists

XI. Adapting to the presence of others

XII. Warfare: adaptive or not? Implications for material culture (the elusive war).

XIII. Contemporary implications of archaeological theory.

COURSE READINGS:

General Principle:

Butzer, K. 1971. Environment and Archaeology

Oderm. 1971. Fundamentals of Ecology.

Resources & Demography

Adams, R. 1965. Land Behind Bagdad

Spooner, B. (ed.) 1972. Population Growth

Solomon, M. 1969. Population Dynamics

Acsádi, Gy and J. Nemeskeri. 1970. History of Human life Span and Mortality.

Alliance

Sanders, W. and B. Price. 1968. Mesoamerica

Harris, M. 1971. Culture, Man and Nature

Medical anthro & epidemiology

Stott, D. 1969. "Cultural and natural checks on population growth."

Hunter-gatherer

Lee, R. and I. Devore. 1968. Man the Hunter.

Biccheri, M. 1972. Hunters and Gatherers Today.

Horticulturalists and Food Production

Binford, L. 1968. "Post Pleistocene Adaptations:

Flannery, K. 1969. "The ecology of early food production in Mesopotamia."

Dumond, D.E. 1969. "Swidden agriculture and the rise of Maya Civilization."

Agriculturalists

Stevenson, R. 1966. Population Density and State Formation in Sub-Saharan Africa.

Steward, J. 1960. Irrigation Civilizations

Adapting to the Presence of Others

Marcus J. 1973. Territorial organization of the Classic Maya."

Haggitt, P. 1965. Locational Analysis.

Rathje. 1969. "The daily grind: Mesoamerican trade."

Warfare

M. Fried, M. Harris and Murphy. 1967. War: the anthropology of armed conflict and aggression.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information — Department: Archaeology

Abbreviation Code: Arc. Course Number: 376 Credit Hours: 5 Vector: 3-0-2

Title of Course: Quantitative Methods in Archaeology

Calendar Description of Course: Theory, method and operation of the application of statistical techniques to the description, classification, analysis and interpretation of archaeological data.

Nature of Course Lecture laboratory. Lecture and laboratory course introducing the use of basic quantitative methods in the solution of archaeological problems.

Prerequisites (or special instructions):

MATH 101 or equivalent; ARC. 101; ARC. 372; ARC. 371.

What course (courses), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? Annually

Semester in which the course will first be offered? Fall 1975

Which of your present faculty would be available to make the proposed offering possible? Jack D. Nance.

3. Objectives of the Course — To give students a working knowledge of the theory of and rationale for applying quantitative techniques to the testing of hypotheses regarding archaeological data and the solution of common archaeological problems.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	None
Audio Visual	None
Space	None
Equipment	None

5. Approval

Date: Feb 13, 1975

Department Chairman — Dean — Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see MemoraAdum SCUS 73-34a.

Course Outline
J. D. Nance
January 1975

ARCHAEOLOGY 376

QUANTITATIVE METHODS IN ARCHAEOLOGY

I. General Nature and Purpose:

Application of quantitative techniques to the testing of hypotheses about the meaning of specific sets of archaeological data. Primary emphasis will be upon the kinds of data with which archaeologists work, appropriate quantitative measures to apply to these data and meaning of the statistical results. Overall objective is to give students a working knowledge of the use of quantitative techniques as applied to description, classification, analysis and interpretation of archaeologically-derived objects and information.

II. Course Requirements:

Students will be expected to undertake a quantitative examination of a set of archaeological data. The results of the investigation will be presented in a research paper. A take-home examination will constitute the final.

III. Reading:

See attached reading list.

ARCHAEOLOGY 376

IV. Course Outline:

1. Why quantitative analyses?
2. The role of quantitative method in archaeology.
3. Terminology and notation.
4. Basic quantitative notions.
5. Archaeological data: kinds and characteristics.
6. Archaeological concepts and units of observation.
7. Basic sampling units in archaeology.
8. Describing archaeological distributions.
9. Applications of the normal curve in archaeology.
10. Probability and archaeological inference.
11. Applications of the binomial distribution in archaeology.
12. Hypothesis testing in archaeology.
13. Intra-occupation artifact variability.
14. Inter-occupation artifact variability.
15. Correlation and regression: definition of archaeological relationships.
16. Non-parametric statistical applications.
17. Seriation: Time/space studies.
18. Generation of statistical taxa.
    a. Use of chi square
    b. Numerical taxonomy
19. The statistics of dating.

Jack D. Nance

ARC. 376

QUANTITATIVE METHODS IN ARCHAEOLOGY

READING LIST

Belous, R.
1953 The Central California sequence re-examined. American Antiquity:18:341-353.

Binford, L.R.
1968 New perspectives in archaeology. Aldine, Chicago. (several articles by Longacre, Whallon, et. al.)

Borillo, M.
1974 A few remarks on Whallon's "A new approach to pottery typology." American Antiquity, 39:371-372.

Brainerd, G.W.
1951 The place of chronological ordering in archaeological analysis. American Antiquity, 16:301-313.

Brothwell, D.
1969 Stones, pots and people: a plea for statistical caution. In: Science and Archaeology. D. Brothwell and E. Higgs (Eds.). Thames and Hudson, London.

Casteel, R.
1974 A method for estimation of live fish weight from the size of skeletal elements. American Antiquity. 39:94-97.

Clarke, D. L.
1968 Analytical Archaeology, Methuen, London.

Cole, J. P. and C.A.M. King
1968 Quantitative Geography. John Wiley, New York.

Dacey, M.
1973 Statistical tests of spatial association in the location of tool types. American Antiquity 38:320-328.

Deetz, J. and E. Dethlefsen
1965 The doppler effect and archaeology:...Southwestern Journal of Anthropology. 21:196-206.

Dempsey, P. and M.A. Baumhoff
1963 The statistical use of artifact distribution to establish chronological sequence. American Antiquity 31:502-510.

Dethlefsen, E. and J. Deetz
1966 Deaths heads, cherubs and willow trees:. . . American Antiquity 31:502-510.

Ferguson, G. A.
1959 Statistical Analysis in Psychology and Education. McGraw-Hill, New York.

Fitting, J.
1965 A quantitative examination of Virginia fluted points. American Antiquity 30:484-491

Harkins, P.B. et.al.
1973 Introduction to computer programming for the social sciences. Allyn and Bacon, Boston.

Kroeber, A. L.
1940 Statistical classification. American Antiquity 6:29-44.

Krumbein, W. C. and F. A. Graybill
1965 An Introduction to statistical models in geology McGraw-Hill, New York.

Lewis, T. and M. Kneberg
1960 The Archaic culture in the middle south. American Antiquity. 25:161-183.

McNemar, Q.
1962 Psychological statistics. John Wiley, New York.

Movius, H. et. al.
1968 The analysis of certain major classes of Upper Palaeolithic tools. American School of Prehistoric Research, Bulletin #26 .

Rackerby, F.
1973 A statistical determination of the Black Sand occupation at the Macoupin site, Jersey Co., Illinois. American Antiquity 38:96-101.

Read, D. W.
1974 Some comments on the use of mathematical models in archaeology. American Antiquity 39:3-15.

Robinson, W. S.
1951 A method for chronologically ordering archaeological deposits. American Antiquity 16:293-301.

Sackett, J.
1966 Quantitative analysis of Upper Palaeolithic stone tools. Recent Studies in Palaeoanthropology. A special publication of American Anthropologist.

Siegel, S.
1956 Non parametric statistics for the behavioral sciences. McGraw-Hill, New York.

Spaulding, A.
1953 Statistical techniques for the discovery of artifact types. American Antiquity 18:305-313.

Spaulding, A.
1960 Statistical description and comparison of artifact assemblages. In: The application of quantitative methods in archaeology. R. Heizer and S. Cook (Eds.). Viking Fund Publications in Anthropology.

1960 The dimensions of archaeology. In: Essays in the science of culture. Thomas Crowell, New York.

Thomas, D. H.
1969 Great Basin hunting patterns: a quantitative method for treating faunal remains. American Antiquity 34:392-401.

1969 Regional sampling in archaeology: a pilot Great Basin research design. University of California Archaeological Survey (Los Angeles), Annual Report 1968-69.

1971 On the use of cumulative curves and numerical taxonomy. American Antiquity. 36:206-209.

1974 Predicting the past. Holt, Rinehart and Winston.

Tugby, D.
1958 A typological analysis of axes and choppers from southeast Asia. American Antiquity 24:24-33.

Tugby, D.
1965 Archaeological objectives and statistical methods: a frontier in archaeology. American Antiquity. 31:1-16.

1969 Archaeology and statistics. In: Science in archaeology. D. Brothwell and E. Higgs (Eds.), Thames and Hudson, London.

Veldman, R. K.
1967 Fortran programming for the behavioral sciences.

Washburn, D.
1974 Nearest neighbor analysis of Pueblo I - III settlement patterns along the Rio Puerco of the East, New Mexico. American Antiquity 39:315-334.

Whallon, R.
1972 A new approach to pottery typology. American Antiquity 37:13-33.

Williams, L.,D. H. Thomas and R. Bettinger
1973 Notions to Numbers: Great Basin settlement patterns as polythetic sets. In Research and Theory in Current Archaeology. Charles Redman (editor), John Willey and Sons, New York.

Yeates, M.
1974 An introduction to quantitative analysis in human geography. McGraw-Hill, New York.

Young, R. K. Introductory statistics for the social sciences. McGraw-Hill, New York