



FOR APPROVAL

PUBLIC

OPEN SESSION

TO: UTSC Academic Affairs Committee

SPONSOR: Maydianne Andrade, Acting Vice-Principal Academic and Dean
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PRESENTER: Mark Schmuckler, Vice-Dean Undergraduate
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DATE: September 5, 2019 for September 12, 2019

AGENDA ITEM: 3

ITEM IDENTIFICATION:

Category 2 Certificate: Certificate in Bioarchaeology

JURISDICTIONAL INFORMATION:

University of Toronto Scarborough Academic Affairs Committee (AAC) “is concerned with matters affecting the teaching, learning and research functions of the Campus” (*AAC Terms of Reference, Section 4*). Under section 5.6 of its terms of reference, the Committee is responsible for approval of “Major and minor modifications to existing degree programs.” The AAC has responsibility for the approval of Major and Minor modifications to existing programs as defined by the University of Toronto Quality Assurance Process (*UTQAP, Section 3.1*). Category 2 Certificates follow the protocols for the approval and closure of minor modifications [*Policy on Certificates (For Credit and Not-for-Credit), February 25, 2016*].

GOVERNANCE PATH:

- 1. UTSC Academic Affairs Committee [For Approval] (September 12, 2019)**

PREVIOUS ACTION TAKEN:

No previous action in governance has been taken on this item.

HIGHLIGHTS:

The Department of Anthropology at the University of Toronto Scarborough (UTSC) is proposing a new Category 2 Certificate: Certificate in Bioarchaeology. The proposed start date is January 2020. In proposing this Certificate out-of-cycle, our goal is to make it available to students as soon as possible.

Category 2 Certificates are for-credit and are offered in conjunction with an undergraduate program. Completion of the Certificate is recorded on the students' academic transcript.

It is a departmental aspiration to move in the direction of creating a more balanced multi-disciplinary experience for students by expanding offerings in Archaeology. The proposed Certificate in Bioarchaeology represents a first step in actualizing the Department of Anthropology's goals to strengthen offerings in Archaeology, and is intended to answer student demand for more Archaeology content with a coherent sequence of courses, through which they will gain both a broad understanding of Archaeology as a discipline, and focused training in bioarchaeological methods.

Bioarchaeology is a subdiscipline of Archaeology that focusses on the study of biological materials from archaeological sites, with a particular emphasis on skeletal remains (both human and non-human). The goal of the proposed Certificate is to provide students with in depth knowledge of human skeletal anatomy, procedures and methods for describing skeletal remains including indicators of sex, age, stature, weight, activity, ancestry, diet, and health, and a comprehensive understanding of the archaeological contexts and cultural processes associated with human burials and excavated human and animal skeletal remains.

The proposed Certificate groups existing courses that have significant bioarchaeological content in order to provide a clear pathway for students interested in this area of the discipline. The Department has been expanding course offerings to include more explicit Archaeology content (i.e., ANTB80H3 Introduction to Archaeology: Methods, Theories, and Practices, ANTD35H3 Bioarchaeology) to take advantage of existing faculty expertise, and now have an adequate number of related courses (4) to be able to offer a coherent framework for training in Bioarchaeology.

Bioarchaeology is a particular emphasis of many Canadian graduate programs in Anthropology, and students who complete the proposed Certificate will be able to use it as a way of strengthening their application to do graduate work in this specific subdiscipline of Archaeology. This Certificate has the potential to open doors for students, who were previously poorly situated to apply to do research in Archaeology since their degree is in Evolutionary Anthropology.

The proposed Certificate was developed within the Department of Anthropology with extensive input from its faculty. This proposal has been reviewed by the Dean's Office,

the Office of the Vice-Provost, Academic Programs, and the UTSC Campus Curriculum Committee.

FINANCIAL IMPLICATIONS:

There are no net financial implications to the campus operating budget.

RECOMMENDATION:

Be It Resolved,

THAT the proposal to introduce a new (Category 2) Certificate in Bioarchaeology, as described in the proposal dated July 11, 2019 and recommended by the Acting Vice-Principal, Academic and Dean, Maydianne Andrade, be approved effective January 1, 2020 for the 2019-20 academic year.

DOCUMENTATION PROVIDED:

1. Proposal to introduce a new Certificate in Bioarchaeology, dated July 11, 2019.

University of Toronto Proposal to Create a Certificate in Conjunction With an Undergraduate Program

Proposed certificate name: E.g., Certificate in Human Resources Management (Faculty of Arts & Science)	Certificate in Bioarchaeology (University of Toronto Scarborough)
Undergraduate degree(s) the certificate will be offered in conjunction with:	Honours Bachelor of Science
Associated Programs	<ul style="list-style-type: none">• Specialist in Evolutionary Anthropology• Major in Evolutionary Anthropology
Academic unit:	Department of Anthropology
Faculty/academic division:	University of Toronto Scarborough (UTSC)
Dean's office contact:	Annette Knott, aknott@utsc.utoronto.ca
Version date:	July 11, 2019

1 Summary

The Department of Anthropology at the University of Toronto Scarborough (UTSC) is proposing a new Category 2 Certificate, titled: Certificate in Bioarchaeology.

Bioarchaeology is a subdiscipline of Archaeology that focusses on the study of biological materials from archaeological sites, with a particular emphasis on skeletal remains (both human and non-human). The development of Bioarchaeology has been a critical element of a re-orientation in Archaeology, starting in the 1970s, towards more scientific approaches. Bioarchaeologists are largely focused on using skeletal materials to answer questions about past human lifeways. For example, it is possible to use bioarchaeological methods on human remains to study demographic distributions of ancient populations, as well as their health status, and certain elements of behaviour such as diet (e.g., through stable isotope analysis) and habitual activities (e.g., rowing, squatting). Study of non-human skeletal remains can provide critical information about the ecological context of past human populations, and the

nature of their interactions with their environment.

The goal of the proposed Certificate is to provide students with in depth knowledge of human skeletal anatomy, procedures and methods for describing skeletal remains including indicators of sex, age, stature, weight, activity, ancestry, diet, and health, and a comprehensive understanding of the archaeological contexts and cultural processes associated with human burials and excavated human and animal skeletal remains.

The Certificate in Bioarchaeology represents a first step in actualizing the Department of Anthropology's goals to strengthen offerings in Archaeology. With the current faculty complement, Bioarchaeology is the only area of the discipline in which the Department can offer upper level undergraduate courses. This Certificate is intended to answer student demand for more Archaeology content with a coherent sequence of courses, through which they will gain both a broad understanding of Archaeology as a discipline, and focused training in bioarchaeological methods.

Bioarchaeology is a particular emphasis of many Canadian graduate programs in Anthropology, and students who complete the proposed Certificate will be able to use it as a way of strengthening their application to do graduate work in this specific subdiscipline of Archaeology. This Certificate has the potential to open doors for students, who were previously poorly situated to apply to do research in Archaeology since their degree is in Evolutionary Anthropology.

2 Effective Date

January 2020

3 Academic Rationale

In a North American context, Anthropology as a discipline is widely considered to have four main subdisciplines: Sociocultural Anthropology, Evolutionary Anthropology, Linguistic Anthropology, and Archaeology. When the UTSC Anthropology faculty were part of an omnibus Department of Social Sciences, a decision was made to focus on building strength in the first two areas. Once the Department of Anthropology was established in 2012, it was clear that an unusual situation for a North American Anthropology Department had developed, in that the UTSC Department of Anthropology lacked a concentration of courses in Archaeology.

It is a departmental aspiration to move in the direction of creating a more balanced multi-disciplinary experience for students by expanding offerings in Archaeology. Two of the Department's current Evolutionary Anthropology faculty members (Drs. M.

Schillaci and G. Dewar) have expertise in the Bioarchaeology subdiscipline of Archaeology. The Department has been expanding course offerings to include more explicit Archaeology content (i.e., ANTB80H3 Introduction to Archaeology: Methods, Theories, and Practices, ANTD35H3 Bioarchaeology) to take advantage of that expertise, and now have an adequate number of related courses (4) to be able to offer a coherent framework for training in Bioarchaeology.

Bioarchaeology uses the latest scientific methods to understand past human behaviour directly from human remains; methods include stable isotope analysis (diet and mobility), ancient DNA and morphometrics (genetics, ancestry and population movements) and biomechanics (habitual activities). This has meant that Bioarchaeology has been influential in raising the profile of Archaeology as a scientific discipline. As such, training in Bioarchaeology offers a logical complement to the other types of scientific content that students learn as part of our Major and Specialist programs in Evolutionary Anthropology, both of which lead to a BSc.

The proposed Certificate groups existing courses that have significant bioarchaeological content in order to provide a clear pathway for students interested in this area of the discipline. Organizing these courses in this way constitutes a first step in moving towards the Department's aspiration to create a more balanced multi-disciplinary experience, while at the same time offering students interested in Archaeology a clear option to maximize their opportunities within the current limited framework.

Bioarchaeology is an area of significant strength in many Canadian Anthropology and Archaeology departments (e.g., University of Calgary, University of Alberta, Trent University, and McMaster University). Providing training in this area will increase the likelihood of UTSC students going on to complete graduate work in Bioarchaeology, both because completing the sequence of courses required for the proposed Certificate will provide them with relevant academic preparation, and because having the Certificate will signal that training to prospective supervisors.

4 Need and Demand

There have been numerous anecdotal cases in recent years of students interested in pursuing archaeological research, but who were frustrated by the limited offerings in that area in the Department of Anthropology. As one example, a graduate of the program, who is currently a PhD student in Archaeology in the U of T graduate program in Anthropology, had to actively seek out opportunities outside UTSC to fill gaps in her training. In combination with the other elements of their degree in Evolutionary Anthropology, the proposed Certificate will provide students with a level of training in Bioarchaeology that will give them the preparation they need to go on to do graduate work and give students a basis upon which to highlight their

preparation in their graduate school applications.

To quantify the magnitude of interest in Archaeology, Students were surveyed in class in all Spring term 2014 C -and D-level Evolutionary Anthropology courses (6 courses; ANTC16H3, ANTC40H3, ANTC48H3, ANTD16H3, ANTD17H3, ANTD35H3). A total of 91 students participated of which 95% (86 students) indicated an interest in taking courses in Archaeology, with 78% (71 students) expressing interest in upper level courses. The results about specific areas of interest within the discipline suggest that students would like to see a range of courses on prehistoric topics from a variety of regions, with a particular focus on Africa. This is in line with the research emphasis of Dr. Dewar, who will be mainly responsible for offering ANTD35H3 (the capstone course in the Certificate).

We anticipate that many of current Major and Specialist students in Evolutionary Anthropology (currently 128) will want to complete the proposed Certificate, since it provides a very logical complement to these programs.

5 Admission Requirements

Students must be enrolled in either the Specialist or Major program in Evolutionary Anthropology

6 Program Requirements

Students must complete the following four courses, for a total of 2.0 credits, and must earn an average GPA of 2.7 across the four courses:

ANTB80H3 Introduction to Archaeology: Methods, Theories, and Practices

ANTC47H3 Human and Primate Comparative Osteology

ANTC48H3 Advanced Topics In Human Osteology

ANTD35H3 Bioarchaeology

[See Appendix B for a complete description of these courses]

These courses make up a logical sequence, with ANTB80H3 providing a broad-based introduction to the field of Archaeology, ANTC47H3 and ANTC48H3 providing increasingly specialized training in Human Osteology, and ANTD35H3 providing a forum in which that training is applied to explore how skeletal remains can be used to reconstruct past lifeways.

Students in these courses are assessed through a combination of examinations, case studies (e.g., osteobiographic report in ANTC48H3), papers emphasizing critical reading of the primary literature, and primary laboratory based research.

Students will complete the Certificate as part of their four-year undergraduate degree, completing ANTB80H3 in their second year, ANTC47H3 and ANTC48H3 in their third year, and ANTD35H3 in their fourth year.

The courses taken to complete the Certificate are not subject to the 12 distinct credits rule that applies to credits within programs; students can count the courses towards the completion of the Certificate and their program(s) of study (POSt).

7 Calendar Copy

CERTIFICATE IN BIOARCHAEOLOGY

This certificate will provide students with concentrated training in Bioarchaeology, the subdiscipline of Archaeology that focusses on the study of biological materials from archaeological sites, with a particular emphasis on skeletal remains (both human and non-human).

Enrolment Requirements

Students must be enrolled in either the Specialist or Major program in Evolutionary Anthropology

Certificate Requirements

Students must complete a total of 2.0 credits as follows*:

ANTB80H3 Introduction to Archaeology: Methods, Theories, and Practices

ANTC47H3 Human and Primate Comparative Osteology

ANTC48H3 Advanced Topics In Human Osteology

ANTD35H3 Bioarchaeology

*Students must earn an average GPA of 2.7 across the four courses to be awarded the Certificate.

8 Consultation

There has been extensive consultation with the Department of Anthropology, including discussions with the Curriculum Committee and faculty. The proposal has been reviewed by the Dean's Office, the Office of the Vice-Provost, Academic Programs, and the Campus Curriculum Committee.

9 Resources

No additional resources are required.

The proposed Certificate will not affect any existing agreements with other institutions.

10 Oversight and Accountability: Review

The certificate will be housed in the Department of Anthropology, and will be aligned to its cyclical review process.

11 UTSC Administrative Steps

Administrative Steps Required	Date
Departmental Curriculum Committee	March 22, 2019
Campus Curriculum Committee	August 26, 2019

12 UTQAP/Formal Governance Process

Levels of Approval Required	Date
<ul style="list-style-type: none">• Decanal Sign-Off• Provost Office Sign-Off	May 14, 2019
UTSC Academic Affairs Committee	
Submission to Provost's Office	
AP&P – reported annually	

Appendix A: Proposed Learning Outcomes

Certificate Expectations	Certificate Learning Outcomes	How the Design/Structure Supports the Certificate Expectations
<p>1. Depth and Breadth of Knowledge</p> <p>Depth of Knowledge: is attained through a progression of introductory, core and specialized courses. Specialized courses will normally be at the C and D levels.</p> <p>Breadth of Knowledge: students will gain an appreciation of the variety of modes of thinking, methods of inquiry and analysis, and ways of understanding the world that underpin different intellectual fields.</p>	<p>Depth and breadth of knowledge is understood in the Certificate in Bioarchaeology as knowledge of the fundamental principles that underlie Archaeology as a discipline, familiarity with skeletal and dental anatomy, a mastery of the patterns of variation in the human skeleton, and its basis in terms of sex, age, stature, weight, activity, ancestry, diet, and health.</p> <p>This is reflected in students who:</p> <ol style="list-style-type: none"> 1. Have a broad understanding of the history and practice of Archaeology. 2. Are able to identify all the components of the skeleton and their associated features. 2. Have an awareness of the nature of variation that exists in the skeleton as a result of sex, age, stature, weight, activity, ancestry, diet, and health. 3. Are able to identify isolated teeth, and name dental features. 4. Have a comprehensive understanding of the archaeological contexts and cultural processes associated with human burials and excavated human and animal skeletal remains. 	<p>The design and requirement elements that ensure these student outcomes for depth and breadth of knowledge are:</p> <ol style="list-style-type: none"> 1. Lecture based survey of archaeology as a discipline (ANTB80) 2. Detailed, lab-centred study of human skeletal anatomy to permit students to recognize the parts of the skeleton and identify their features (ANTC47, ANTC48). 3. Lab exercises which involve making estimates of sex, age and health status from real skeletal material (ANTC47, ANTC48, ANTD35). 4. Lectures on dental anatomy and lab exercises that involve identifying teeth and learning to recognize and name their features (ANTC47, ANTC48). 5. Critical engagement with the primary literature to provide a knowledge base relevant to interpretation of skeletal remains from archaeological sites (ANTD35).
<p>2. Knowledge of Methodologies</p> <p>Students demonstrate, and expand on, their knowledge of different methodologies and approaches relevant to their area of study. They are able to apply different methodologies</p>	<p>Knowledge of Methodologies is understood in the Certificate in Bioarchaeology as a familiarity with techniques for gathering data about the skeleton, and with the context by which these data are interpreted. This is reflected in students who are able to:</p>	<p>The design and requirement elements that ensure these student outcomes for knowledge of methodologies are:</p> <ol style="list-style-type: none"> 1. Lab exercises in ANTC47 on identifying elements of the skeleton.

<p>in addressing questions that arise in their area of study.</p>	<ol style="list-style-type: none"> 1. Gather observational data about the skeleton e.g., assessing presence or absence, and completeness, of skeletal and dental elements. 2. Make simple measurements that capture skeletal and/or dental form. 3. Critically evaluate methods applied in the interpretation of archaeological data. 	<ol style="list-style-type: none"> 2. Lab exercises in ANTC48, ANTC99, and ANTD35 that involve taking various measurements of the skeleton and dentition. 3. Writing assignments based on a critical reading of the primary literature in ANTD35.
<p>3. Awareness of Limits of Knowledge</p> <p>Students demonstrate an awareness of the limits of their own knowledge and their appreciation of the uncertainty, ambiguity, and limits to our collective knowledge and how these might influence analyses and interpretations.</p>	<p>Awareness of Limits of Knowledge is understood in the Certificate in Bioarchaeology as an understanding of the limits on what information can be gleaned from skeletal and dental data.</p>	<p>The design and requirement elements that ensure these student outcomes for Awareness of Limits of knowledge are:</p> <ol style="list-style-type: none"> 1. In courses on the human skeleton (e.g., ANTC47, ANTC48), the limits on the accuracy of methods for gleaning information from the skeleton (e.g., with respect to accuracy of ageing and sexing) are discussed. 2. In courses about the archaeological record (e.g., ANTB80, ANTD35) the limits imposed by the imperfect nature of that record are discussed and acknowledged.
<p>4. Communication Skills</p> <p>Students are able to communicate information, arguments and analyses clearly, both orally and in writing.</p>	<p>Communication skills are understood in the Certificate in Bioarchaeology as the ability to critically engage with the primary literature and make a strong written argument.</p>	<p>The design and requirement elements that ensure these student outcomes for Communication skills are:</p> <ol style="list-style-type: none"> 1. All C- and D-level courses included in the Certificate require submission of a major piece of written work that involves critically engaging with the primary literature.

Appendix B: List of Courses

ANTB80H3 – Introduction to Archaeology: Methods, Theories, and Practices

This course introduces students to the methods, theories, and practices used in Archaeology. Building on the course material presented in ANTA01H3, there will be a focus on important themes in Archaeology as a subfield of Anthropology, including: artefact analysis, dating methods, theories of the origins of social development/complexity, and careers in archaeology today. This course will include lectures and complimentary readings that will expose students to the important ideas within the field. There will also be an experiential component in the form of four hands-on workshops where students will get to interact with artefacts and gain experience using some of the methods discussed in class. There will be an extra workshop for students to get help with their essay outline.

Prerequisite: ANTA01H3

Exclusion: ANT200Y1, ANT200Y5, ANT200H5

Enrolment Limits: 150

Breadth Requirements: Natural Sciences

ANTC47H3 - Human and Primate Comparative Osteology

A "hands-on" Laboratory course which introduces students to analyzing human and nonhuman primate skeletal remains using a comparative framework. The course will cover the gross anatomy of the skeleton and dentition, as well as the composition and microstructure of bone and teeth. The evolutionary history and processes associated with observed differences in human and primate anatomy will be discussed.

Science credit

Prerequisite: ANTB14H3

Exclusion: ANT334H, ANT334Y

Enrolment Limits: 33

Breadth Requirements: Natural Sciences

ANTC48H3 - Advanced Topics In Human Osteology

A "hands-on" laboratory course which introduces students to the methods of analyzing human skeletal remains. Topics and analytic methods include: (1) the recovery and treatment of skeletal remains from archaeological sites; (2) odontological description, including dental pathology; (3) osteometric description; (4) nonmetric trait description; (5) methods of estimating age at death and sex; (6) quantitative analysis of metric and nonmetric data; and (7) paleopathology.

Science credit

Prerequisite: ANTC47H3

Exclusion: ANT334H, ANT334Y

Enrolment Limits: 33

Breadth Requirements: Natural Sciences

ANTD35H3 - Bioarchaeology

This course will focus on a new direction in anthropology, exploring the potential of skeletal remains in reconstructing past lifeways. This seminar style class will build upon concepts introduced in Human Osteology courses. Additionally, more advanced methods of reconstructing patterns of subsistence, diet, disease, demography and physical activity.

Prerequisite: ANTC47H3 and ANTC48H3

Exclusion: ANT434H, ANT441H

Enrolment Limits: 25

Breadth Requirements: Natural Sciences