

**Anthropology 2D03
DNA Meets Anthropology
Course Outline
Fall 2017**

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Office: CNH 412
Office Hours: Wednesdays 4:00-5:00 PM, or by appointment
Class: Wednesdays 7:00-10:00 PM, ETB 224
Textbook: *An Introduction to Molecular Anthropology*, Mark Stoneking, ISBN: 978-1-118-06162, available from campus bookstore. Any additional readings will be made available through Avenue to Learn.

Overview

This course is an introduction to the application of genetics and DNA to anthropological topics. In this course, we will explore these topics primarily within a human context, but will also consider non-human primates, and we will examine how the study of other organisms, such as pathogens and domesticates, informs our own evolutionary history. We will discuss what DNA can tell us about human origins, patterns of global migration and dispersal, phenotypic variation, selection, and adaptation. We will consider the application of genetics to medicine, forensics, and politics.

The nature of the material in this course will be cumulative. In the early weeks we will discuss the basics of DNA, evolution, and inheritance. We will go on to apply these concepts throughout the remaining weeks. As your instructor, it is my role to demonstrate the relevance of these topics to anthropology, but it is crucial that you understand the foundations. If you feel you are slipping behind or not grasping some of these concepts, please speak up and bring it to my attention early!

Intended Learning Outcomes

1. Gain a functional understanding of the basic science underlying DNA and genetics, including inheritance, evolution, and human variation.
2. Learn how genetic data is obtained from a physical sample, how samples are chosen, and the ethics of sample collection and analysis.
3. Become familiar with the basics of molecular genetic analyses, the ways in which we extrapolate functional or evolutionary meaning from DNA sequences.
4. Discover how our understanding of modern human origins, migrations, adaptations, and relationships with archaic hominins has been informed by genetic information.
5. Develop your ability to apply basic genetic theory to questions of anthropological importance.

Course Assessments

Quizzes – 25%

Following each class (except midterm week), there will be a short quiz on Avenue to Learn. The quiz will be available to you for 5 days (from Thursday midday to the following Tuesday midday) and you are permitted to use any class notes, slides, or textbook. You will only be permitted one attempt at each quiz and there will be an imposed time limit. These quizzes should serve as a benchmark to assess your own understanding of the most important concepts of the week. The lowest quiz mark will be dropped.

Midterm Exam – 30%

This exam will contain a combination of multiple choice and short answer questions. The exam will cover all material covered in class to date as well as assigned readings. In addition to testing your knowledge of factual material, this exam will assess your ability to apply the concepts covered in class. **The midterm exam will be in class on October 25.**

Avenue Discussion Participation – 5%

A discussion board will be set up on Avenue to Learn for you to post and respond to questions about course material. The instructor will be monitoring the discussion and moderating if necessary. Your mark will be based on participation in the discussion over the term.

Final Exam – 40%

The final exam will be cumulative, and contain a combination of multiple choice, short answer, and long answer questions. All material covered in class or in any assigned reading is considered testable material. **Final exam date and time to be assigned by the registrar.**

Tentative Schedule

Week 1 (September 6)	Introduction to molecular anthropology
Week 2 (September 13)	DNA basics: Genes and molecular markers (Stoneking chapters 1, 2, and 7)
Week 3 (September 20)	Molecular Evolution (Stoneking chapters 4, 5, and 6)
Week 4 (September 27)	Genetic sampling and ethics (Stoneking chapters 3, 8, and 9)
Week 5 (October 4)	Population genetics – Guest lecture by Dr. Ana Duggan (Stoneking chapters 10, 11, and 12)
Week 6 (October 11)	Midterm recess
Week 7 (October 18)	Human origins, migration, and culture (Stoneking chapters 13, 14, 16, and 19)
Week 8 (October 25)	Midterm exam
Week 9 (November 1)	Ancient DNA – how does it work and what have we learned? (Stoneking chapter 15)
Week 10 (November 8)	Selection and adaptation, domestication (Stoneking chapters 17 and 18)
Week 11 (November 15)	Forensics and medical genetics (Readings to be provided)
Week 12 (November 22)	Infectious disease, human history through alternative organisms (Readings to be provided)
Week 13 (November 29)	“Omics” and DNA applied to you (Stoneking chapter 20)
Week 14 (December 6)	Exam review

COURSE MODIFICATION

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification become necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

LATE POLICY

Extensions for course assignments will only be granted under conditions of medical, family, or other extraordinary circumstances. All other late assignments will be penalized at a rate of 5% per day. Late assignments will not be accepted after 3 days beyond the original deadline without appropriate documentation from the Office of the Associate Dean of Social Sciences.

SPECIAL ACCOMMODATIONS

Any student with special learning needs should contact the instructor by the end of the second week of classes at the latest. You must have written confirmation from Student Accessibility Services (formerly the Center for Student Development). Students can contact SAS to arrange assistance in the completion of exams. <http://sas.mcmaster.ca/>. SAS is located in MUSC-B107 905-525-9140 x28652

NOTE: Disclosure of disability-related information is personal and confidential.

Student Accessibility Services offers various supports for students with disabilities. We work with full time and part time students. SAS provides or assists students with their academic and disability-related needs, including: Learning Strategies, Assistive Technologies, Test & Exam Administration, Note-Taking Programs, Classroom Accommodations. Please inform the instructor if there are disability needs that are not being met.

McMaster University Policy on Academic Accommodation of Students with Disabilities & McMaster University Anti-Discrimination Policy

•<http://www.mcmaster.ca/policy/StudentsAcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

ACCESSIBILITY STATEMENT

If you require this information in an alternate/accessible format, please contact Delia Hutchinson at 905-525-9140 extension 24523 or email hutchin@mcmaster.ca

ACADEMIC DISHONESTY

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, Appendix 3, <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g., the submission of work that is not one's own for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

REQUEST FOR RELIEF FOR MISSED ACADEMIC TERM WORK

The University recognizes that students periodically require relief from academic work for medical or other personal situations. This academic regulation aims to manage these requests by taking into account the needs and obligations of students, instructors and administrators. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course. Any concerns regarding the granting of relief should be directed to the respective Faculty Office. Requests for relief should be made with a commitment to academic integrity in mind. Requests that deviate from this commitment will be handled under the Academic Integrity Policy and Student Code of Conduct, where appropriate.

Please Note: The McMaster MSAF policy has changed recently.

- The MSAF is only valid for 3 days
- MSAF forms may only be submitted for assessments worth less than 25% of the course weight

FACULTY OF SOCIAL SCIENCES E-MAIL COMMUNICATION POLICY

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.