

**Saint Mary's University**  
**Department of Anthropology**  
**923 Robie St, Halifax, NS B3H 3C3, Canada**

**ANTHROPOLOGICAL GENETICS**

**ANTH 3381**

**Instructor:** Dr. Daniel Gaudio

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**Rules for emailing me (I will not read your message unless you follow these rules):**

1. The subject line must contain your first and last name, followed by "ANTH 3381".
2. Address me as "Dr. Gaudio", and clearly word your message so I can understand what you need.
3. You must use proper grammar and punctuation, and do not use texting language (do not abbreviate).

Office hours: Tuesday 11.00-13.00/ Thursday 10.30- 12.30 or by appointment

**Time & location:** Monday & Wednesdays 8:30 am - 9:45 am, McNally Est 104

**Prerequisite:** Undergraduate level ANTH 1280 Minimum Grade of D

**Anthropological Genetics**

Anthropological genetics is a fascinating subfield of Biological Anthropology. During this course students will discover how the use of molecular genetics methods address several issues in anthropological field. Genetics is indeed a powerful way to obtain information about ancient populations as well as modern population. Furthermore is a fundamental discipline to understand human origins and migrations, to collect evidence and key information about biological profile on skeletal remains and identify human remains. The course is organized in two parts: the first part focuses in a gentle introduction to cellular biology, genes, mechanisms of inheritance and basic explanations about Genetic drift, Natural selection and mutations. The second part will be focused on the applications o these knowledge on the anthropological filed, including Paleoanthropology, Bioarchaeology and Forensics. Guest lectures will be organized.

**Course Format:**

Class meetings will consist of in class lectures. Study guides and in-class exercises/reports to help students to become acquainted with the material will be organized.

**Required Texts:** Materials will be provided during the course via Brightspace

**Suggested reading:**

Human Heredity by Michael R. Cummings

**Course Evaluation:**

2 Quizzes (5% x 2) = 10%

*May include multiple choice, true/false, fill-in-the-blanks, and short answer, etc.*

2 Tests (15% each one) = 30%

4 Assignments (10% x 4) = 40%

*May include reports, abstracts, presentations, in class exercise, etc.*

Final Exam = 20% (Total 100%)

Study guides and in-class exercises/reports to help students to become acquainted with the material will be organized.

- Should you miss a class it is your responsibility to find out whether any work has been assigned, and the corresponding deadline.
- **No make-up quizzes will be organized and I do not accept late assignments**, i.e. you will receive a zero, save that you properly justify your absence for extremely serious situations (i.e. illness and related medical certificate, death in your immediate family, etc.). I will take the right to verify any justification, which must be provided immediately. If you do not provide me with these details you will receive ZERO for that assignment/quiz.
- **No make-up possible for the final exam.** However, extreme situations may be considered: according with the SMU regulation you will need to request to contact the instructor (me) and the Dean of Arts.
- **Disrespect**, tardiness and use of phones or any kind of not allowed devices will be penalized by losing a percentage point on their final grade for each offense, without exception.
- Curve grades rules for final grade: in case you get (for example) 89.5% then a round up to 90% will be applied. Again, should your final mark be (for example) 49.4% no round ups will be possible and you will receive an "F" in this course. There are no exceptions.

Your grade will be assessed based on the following scale:

A+ 90-100%

A 85-89%

A- 80-84%

B+ 77-79%

B 73-76%

B- 70-72%

C+ 67-69%

C 63-66%

C- 60-62%

D 50-59%

F 0-49%

## **How to Succeed:**

- Attend class/laboratory, if you don't regularly attend the class you may miss important information and instructions, i.e I may be explaining things which are not on the textbook or on Power Point.
- Complete the study guides and in-class exercises.
- Share with me any difficulties you may meet or progress you may experience.

## **Attendance Policy:**

Follow the SMU academic regulations

## **Academic Misconduct:**

Students must be respectful and polite. All students should become familiar with the rules governing academic misconduct and what constitutes academic misconduct, especially as it applies to plagiarism and test taking, please refer to SMU Academic Calendar, "Examples of Academic Offences".

Ignorance of the rules governing academic misconduct or what constitutes academic misconduct is not an acceptable defense. Alleged cases of academic misconduct are referred to the proper university committees.

*Please always remember that Audiotaping and/or videotaping are not allowed during class unless under my written permission. Should you miss any information from the power point slides during class, you may come see me during my office hours and I may show specific lecture slides (I am not going to show you them all though).*

## **Students with Disabilities:**

Effective accommodation strategies will be developed for students with disabilities. Students requesting classroom accommodations or modifications due to a documented disability must contact the Fred Smithers Centre of Support (<https://smu.ca/campus-life/fred-smithers-centre-exam-accommodations.html>)

## **Brightspace**

Check regularly on Brightspace to keep up-to-date about course progress, changes, etc.

## **Weather conditions:**

In case of snowstorm or severe bad weather SMU could decide to cancel classes. Strategy to minimize disruptions will be discuss in class, last news will be share via Brightspace.

## Course Outline (Important: *the schedule is tentative and subject to change*):

### January

- 9 Course Introduction, First day Survey
- 14 Biomolecules (Slides)
- 16 Cellular Biology (Ch. 2, Human Heredity by Cummings)
- 21 **Assignment 1**
- 23 DNA and Protein Synthesis (Ch. 8-9-10, Human Heredity by Cummings)
- 28 **Quiz 1**, Transmission of genes (Ch. 3, Human Heredity by Cummings)
- 30 The Human Genome Project + class exercise (Ch.3, Our Origins by Larsen)

### February

- 4 Genetic drift, Natural selection, genetic equilibrium (Ch.4, Our Origins by Larsen)
- 6 **Assignment 2**
- 11 Mutations (Ch. 11, Human Heredity by Cummings, Ch.4, Our Origins by Larsen)
- 13 **Test 1**
- 18-20 Winter Break, No class!*
- 25 Mutations and skeletal disease (Slides)
- 27 **Assignment 3.**

### March

- 4 Methods in Anthropological genetics (Ch. 13 Human Heredity by Cummings and slides)
- 6 **Quiz 2.** Ancient DNA-case works (Slides+ Introduction to M. Anth. By Stoneking )
- 11 Guest Lecture (Ancient DNA)
- 13 **Assignment 4.**
- 18 Ancient DNA
- 20 Bioarchaeology and DNA (Ch. 13, Our Origins)
- 25 Race concept, Human Variation and Human Evolution (Ch. 5, Our Origins by Larsen)
- 27 Forensic DNA (Slides)

### April

- 1 Genetic engineering and future development
- 3 **Test 2**
- 5-18 FINAL EXAM