



APPLIED HUMAN GROWTH & DEVELOPMENT

COURSE SYLLABUS

Instructor: Dr. Melanie Martin
Email: martinm7@uw.edu
Office Hours: By appointment

Location: DEN 410
Time: Tues-Thurs 2:30 – 4:20
Class Website: Canvas

COURSE DESCRIPTION AND LEARNING OBJECTIVES

Why do adult heights vary across environments, ethnicities, and even in some families? Are there critical phases of growth and development that influence body size and health? How and why is human growth and development distinct from that of closely related primates? How do we measure and quantitatively evaluate what is considered “normal” or “healthy” growth?

This course combines quantitative methods with evolutionary life history theory, cross-cultural, and clinical pediatrics to examine variation in human growth and development. This course fulfills the Natural World (NW) and Quantitative and Symbolic Reasoning (QSR) General Education Requirements, and is part of the Medical Anthropology and Global Health (MAGH) and Human Evolutionary Biology (HEB) Option. *By the end of this course you should be able to:*

- Identify basic patterns of human growth and development across the life cycle
- Quantify and visualize differences in comparative growth and nutritional status using Excel and WHO growth reference tools
- Apply descriptive and inferential statistics to population assessment of growth and development
- Describe genetic, social, and ecological causes of variation in growth, development, and body size across the life cycle and within and across populations

*****COURSE ASSESSMENT AND EXPECTATIONS*****

1. **Description of due dates and assessments.** Course assessments include five take-home or in-class assignments and two exams. See Course Calendar below for a summary of weekly topics, readings, and assignment due dates. **Detailed descriptions of course assignments, due dates, and assessments are posted on CANVAS**
 - a. **READING QUESTIONS (10% of final grade).** Questions are posted on canvas. Complete questions before class and bring to discuss (or submit ahead of class) for participation credit.
 - b. **TAKE-HOME THEORETICAL QUIZ (15% of final grade):** Open-note, open-book multiple choice and short answer questions covering concepts from Weeks 1-2
 - c. **WEEKLY ASSIGNMENTS (60 points total, 60% of final grade):** Assignments are completed in-class and online through Canvas. Assignments include multiple-choice and short-answer questions

covering assigned readings and lectures related to methods for assessing growth (including growth measurement, descriptive and inferential statistics, Excel, and WHO ANTHRO)

- d. **TAKE HOME APPLIED CONCEPTS QUIZ (15% of final grade).** Open-note, open-book multiple choice and short answer questions applying quantitative methods to assess variability in growth related to mechanisms discussed in Weeks 9-10.

Course Calendar (see Canvas for detailed descriptions of course assignments, due dates, and assessments)

Week	Lectures/topics	Reading/Assignments
1	Course introduction Evolution of human growth Comparative mammalian & primate somatic & brain growth How growth happens	Cameron & Bogin Chapters 11, 15 Bogin 1999 Ch. 2 (pgs. 54-74) Auxology “The growth plate” Bone formation and development
2	Meaning of growth measures Critical growth stages	CB Chapters 1, 2, 5, 17 Reading questions Theoretical quiz (due Monday 1/20)
3	Intro to Excel: formulas & plotting Intro to statistics and statistical variables	Lab Manual Auxology “Statistics” Assignment 1 (due Monday 1/27)
4	Descriptive statistics in Excel (measures of central tendency, range, mean and standard deviation)	Lab Manual Assignment 2 (due Monday 2/3)
5	Measuring growth & development: anthropometric tools & assessing intra-observer reliability	CDC Anthropometry Manual Auxology “Measurements” (In-class) growth measurements & reliability calculation Assignment 3 (due Monday 2/10)
6	Sampling distributions, z-scores, and growth reference curves Intro to WHO Anthro	Cole 2007 Martin et al. 2019 Auxology “Growth references” Lab Manual Assignment 4 (due Monday 2/17)
7	Inferential statistics in Excel: confidence intervals and t-tests	Lab Manual Assignment 5 (due Monday 2/24)
8	Inferential statistics in Excel: chi-square and correlation coefficients	Lab Manual Assignment 6 (due Monday 3/2)
9	Applications: Assessing variation in growth due to physical & social environment	TBD Reading questions
10	Applications: Assessing variation in growth due to nutrition & physical activity	TBD Reading questions
Finals Week	Alternate assignments due	Applied Concepts Quiz (online)

2. Strategies for success in this course:

- a. **Quantitative applications and technological requirements:** More than half of the course will be dedicated to training in basic quantitative methods for comparative growth assessment using Excel and WHO ANTHRO (free software). These classes will meet in the CSSCR computer lab, though you are welcome to use your own laptop. Assignments are designed to increase proficiency in basic quantitative software and statistical assessment regardless of previous training and experience.
Students who have little to no background in Excel or statistics should attend all computer

lab classes. However, students with previous training in these areas have also found these tutorials to be very helpful in reinforcing and expanding their proficiencies. **Additional help in Excel and statistics is available to all students at all levels via the CSSCR Consulting Office** Monday – Friday 9:00 am – 5:00 pm (<https://depts.washington.edu/csscr/consulting/>)

- b. Students with **advanced training in Excel and/or statistics** have the option to complete alternate assignments for weeks 3-4 and 7-8 (meet with Dr. Martin to discuss), including:
 - i. Completing Excel assignments in R (or R commander)
 - ii. Conducting an original analysis of growth variation using a publicly available dataset. For this option, you must submit a proposal in Week 3 briefly detailing your research question, review of existing theory and literature, and proposed methods. Proposals to examine well-established growth patterns will not be approved (e.g. general sex differences or comparisons of populations with vastly different environmental or genetic influences). Students exercising this option are encouraged to, and will be supported in, submitting finished projects for the [Undergraduate Research Symposium](#) (**Applications due Feb. 12**)
- c. Classes in weeks 1-2 and 9-10 will be divided between lecture and discussion. Assigned readings should be done before class. **All readings are posted on canvas.**

3. Course grading system

- a. Individual exams and assignments are graded as percentage of available points. **EXAM curving policy:** If the class mean is less than 75%, all individual scores will be adjusted upwards by an equivalent number of points to reach a mean of 75%. If the class mean is 75% or greater, no curve is applied.

- b. **The following grading scale will be used for final grades:**

Percent = Grade

95 = 4.0 88 = 3.3 81 = 2.6 74 = 1.9 67 = 1.2

94 = 3.9 87 = 3.2 80 = 2.5 73 = 1.8 66 = 1.1

93 = 3.8 86 = 3.1 79 = 2.4 72 = 1.7 65 = 1.0

92 = 3.7 85 = 3.0 78 = 2.3 71 = 1.6 64 = 0.9

91 = 3.6 84 = 2.9 77 = 2.2 70 = 1.5 63 = 0.8

90 = 3.5 83 = 2.8 76 = 2.1 69 = 1.4 60-62 = 0.7

89 = 3.4 82 = 2.7 75 = 2.0 68 = 1.3 <60 = 0.0

*Grades are rounded to nearest whole number (e.g. 89.49 = 89 = 3.4; 89.50 = 90 = 3.5)

COURSE POLICIES

- 1. **Academic misconduct:** The university's policy on plagiarism and academic misconduct is a part of the Student Conduct Code, which cites the definition of academic misconduct in the WAC 478-121. (WAC is an abbreviation for the Washington Administrative Code, the set of state regulations for the university. The entire chapter of the WAC on the student conduct code is here.) According to this section of the WAC, academic misconduct includes:

“Cheating”—such as “unauthorized assistance in taking quizzes”, “Falsification” “which is the intentional use or submission of falsified data, records, or other information including, but not limited to, records of internship or practicum experiences or attendance at any required event(s), or scholarly research”; and “Plagiarism” which includes “[t]he use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment.”

The UW Libraries have a useful guide for students at <http://www.lib.washington.edu/teaching/plagiarism>

- 2. **Accommodation:** Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved

accommodations to me at your earliest convenience so we can discuss your needs in this course. Contact the [Disability Services Office](#) (206-543-6450 or dso@uw.edu) to request accommodations

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (<https://registrar.washington.edu/students/religious-accommodations-request/>).

3. **Communication:** you can arrange to meet with me by appointment in my office or via skype/zoom/gchat outside of posted office hours. Practice [professional communication in your correspondence](#): use your uw.edu email address, employ proper salutations (Dr. or Prof. Martin) and sign-offs, don't write in textspeak or emojis, and make sure you are not asking a question that is answered in the syllabus, on Canvas, or with a quick search. I will respond to emails within 48 hours. If you need to urgently communicate with me, please add *urgent* to the subject line.
4. **Technological problems:** As in life outside the classroom, computer trouble is not a sufficient excuse for missing deadlines or turning in incomplete work. If you are not comfortable with computers (or even if you are), consider completing your assignments early so that you have time to solve computer problems—including seeking help from me or from IT. You should also consider backing up your work for this class (and other classes, too) using a free service like Dropbox or SugarSync. If you do this, even a smashed hard drive or stolen laptop won't mean you'll have to redo the assignments all over again.
5. **Absences and make-up work:** Barring extenuating circumstances, late mid-terms and quizzes be penalized 10% for every day late; accepted only up to five days past the due date. There is no extra-credit option offered in this course.
6. **Inclusivity:** Among the core values of the university are inclusivity and diversity, regardless of race, gender, income, ability, beliefs, and other ways that people distinguish themselves and others. If any assignments and activities are not accessible to you, please contact me so we can make arrangements to make an alternative assignment available.

Learning often involves the exchange of ideas. To include everyone in the learning process, we expect you will demonstrate respect, politeness, reasonableness, and willingness to listen to others at all times – even when passions run high. Behaviors must support learning, understanding, and scholarship. Preventing violence is a shared responsibility in which everyone at the UW plays apart.

If you experience harassment during your studies, please report it to the SafeCampus website (anonymous reports are possible, washington.edu/safecampus/). SafeCampus provides information on counseling and safety resources, University policies, and violence reporting requirements help us maintain a safe personal, work and learning environment.

HELPFUL RESOURCES

- For writing, research, and language services or support, visit the [Anthropology Writing and Research Center](#), the [CLUE Writing Center](#), the [Office of Minority Affairs and Diversity Instructional Center](#), or the [Odegaard Writing and Research Center](#). [Anne Davis](#) is the UW Anthropology Librarian (adavey@uw.edu)
- Contact the [Counseling Center](#) (401 Schmitz Hall, 206-543-1240) for confidential counseling for stress, anxiety, depression and relationship problems. The Counseling Center also offers career counseling, to help you clarify a major or identify career interests.
- Call the Mental Health Clinic at Hall Health (206-583-1551) for same day and next day support and other psychiatric services. UW resources for [Emergency food or aid](#)