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| **Anthro 748: – Human Osteology** |
| Semester 1, 2018 |
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| Advanced method and theory in human osteology. Coursework is a combination of seminars and practical workshops covering the areas of biocultural frameworks, ethics, taphonomy, human identification, dental anthropology, palaeopathology and biomolecular approaches. Work is focused upon method and theory as applied in the southern Hemisphere. |
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Anthro 748: – Human Osteology

Semester 1, 2018

# Course times:

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Seminar: Friday 9 – 10.00 (Rm 706);

Lab: Friday 10-12 pm(Rm 706).

# Course staff:

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Phone: x88574

*Come and see me during office hours. If the posted times don’t work then make an appointment or drop in if the door is open. Don’t try and communicate only by email – if at home pick up the phone and ring. It saves so much time!*

# *Course description*

The emphasis in this paper is on the development of practical skills in the analysis of human remains as well as an underlying understanding of the principles involved. The aim is to introduce you to the preliminaries of human osteology and to give you sufficient knowledge and experience to recognize when it is possible to identify remains, when it is not possible and when further work needs to be done. Classes include a weekly one hour seminar and a weekly two hour practical. These are really busy times so it is recommended that you continue on in the lab after the formal teaching session solidifying your observations and learning.

# Course Aims:

1. To introduce students to the basics of human osteology so that they can identify elements and partial elements to side;

2. To introduce students to the differentiation of human and animal bone in archaeological and forensic contexts;

3. To have students understand the fundamental nature of bone as a living tissue;

4. To have students understand the assumptions and principles that underlie the processes of human identification;

5. To gain an appreciation of the particular nature of human identification and its ethical consideration s within the context of the southern hemisphere;

6. To have students develop a further understanding of the theoretical applications of osteological analysis to archaeological and forensic issues.

## In practical terms that means:

# COURSE BOOKS

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## Seminars:

Martin, D et al. 2013 Bioarchaeology: An integrated approach to working with human remains. New York: Springer ISBN 978-1-4614-6377-1 (Available as an ebook) [BIO]

## Lab Work:

Brickley, M and McKinley, J 2004 Guidelines to the Standards and Recording of Human Remains. Institute of Field Archaeologists Paper No. 7 <http://www.babao.org.uk/HumanremainsFINAL.pdf>  
Mashies, E 2005 Human Osteology and Skeletal Radioology. Roca Baton: CRC Press (ebook)  
White, T 2005 The Human Bone Manual. Boston: Elsevier and Academic Press

1. understand the nature of bone, cartilage, enamel and joints

2. be able to identify skeletal elements to side

3. be able to distinguish human from relatively complete animal bones

4. be able to apply the standard methods of ageing, sexing and identification to relatively complete remains

5. to be able to hypothesise and distinguish indicators of taphonomic processes and some basic pathological processes;

6. to be able to describe human remains accurately and precisely for archaeological or forensic applications;

## Course assessment: (Using a 14 week semester)

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| Weekly seminar participation (see below) | 10% (500-1000 words) (DUE BY END OF SEMESTER) |
| ONE lab tests (Week 10) | 10% (These will be in the form of a practical test) |
| Essay | 40% (3000 words) (DUE WEEK 9) |
| Take home lab test (involving recording of an unknown individual and presentation of report) | 30% (c2000 words (DUE WEEK 15)  10% 5 minute presentation (Week 14) |

## Essay topics:

Your essay topic is to take one method of osteological analysis to do with human identification (e.g.a method of ageing, population affinity, sexing, mobility, etc etc) and explain in plain English the assumptions, the core principles, the limitations of the method and produce on the basis of that a set of guidelines for it use. This isn’t just a summary of a method but it is a careful exploration of a method (e.g. stature estimation using regression analysis or strontium analysis of mobility) and an evaluation of its limits. The aim is to ensure that you can evaluate and explain methods, weigh them up and assess their usefulness. This is the sort of thing you need to be able to do both for your further research in any field but also if you have to justify your work in the field for ethics committees, courts, permit granting agencies etc. In undertaking this I suggest that you use a standard form of meta-analysis and we will discuss how to do this and workshop techniques in class.

## Take home lab test:

In Week 13 you will be given a maximum of three hours in the lab to record a previously unmet skeleton. Your task will be to record its characteristics (you can take photographs, measurements etc) and then prepare a report of the remains as if you are undertaking a contract job. Remember in all such pieces of work it needs to be transparent what you have done and why. The report must also include a plain English summary (up to one page. You will present these results in the last session of the semester.

## Seminars and Seminar Topics:

Seminars will run as a round table discussion led by one member of the class. The aim of each discussion is to explore the topic fully, identify the premises, promises and pitfalls surrounding that particular issue. There is an assigned reading for all class members each week from the text (BIO) and the class leader for that week will introduce us to two relevant case studies which they will circulate on the Monday before their class. They will produce after the class a completed commentary (templates will be provided) – the goal of which is to identify the fundamentals of best practice. These documents will form 10% of the class mark and will be circulated to the entire class.

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| Week | Topic | Reading |
|  | Intro to class etc. | Bio chap 1 |
|  | Bioarch and forensic anthropology – principles | BIO chap 3 |
|  | Understanding taphonomy and its importance NICK | BIO Chap 4 |
|  | Linking Mortuary Context with Human Remains – principles CARISSA | BIO Chap 5 |
|  | Identification of an individual – principles NO CLASS | Franklin, D., 2010. Forensic age estimation in human skeletal remains: current concepts and future directions. *Legal Medicine*, *12*(1), pp.1-7. |
| 6 | MIDSEMESTER BREAK |  |
| 7. | MIDSEMESTER BREAK |  |
| 8. | Disease and trauma – principles of recording and diagnosis RICHARD | Ortner, D.J., 2012. Differential diagnosis and issues in disease classification. *A companion to Paleopathology*, pp.250-267. |
| 9 | Inequality and Poor Health: Infection, Morbidity, and Early Death – thinking about research design NIRE | BIO Chap 6 |
| 10. | Identification of an individual – principles NO CLASS SO MAKE SURE YOU READ FRANKLIN | Franklin, D., 2010. Forensic age estimation in human skeletal remains: current concepts and future directions. *Legal Medicine*, *12*(1), pp.1-7. |
| 11. | Bioarch and the environment – what use is bioarch now? | BIO Chap 10 |
| 12 | Molecules and bioarch – isotopic analysis/ancient DNA MIKE | BIO Chap 8 |
| 13 | Lab Test | BIO Chap 8 |
| 14 | Ethics and best practice | BIO Chap 2 |

## LABS (748)

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| Week |  |
| *1* | *Bone, bone growth and biology Task: Anatomic terms, directions etc. Identify elements and directions. : Draw a bone element identifying the microstructures, the different types of bone, the attachments of soft tissue, and label it thoroughly.* |
| 2 | *Human versus animal*  *Task: Using complete elements you will be asked to identify if a bone is human or animal and explain why. From this you should be able to think of a sequence of questions to aid identification.* |
| 3 | *Fragment identification Task: identification of bones, joints, teeth. Identify which element and what range of motion it might be involved in. [week 3 lab test]* |
| 4 | *Taphonomy and context: Task: consider and describe these taphonomic indicators plus the role of context in identification of burial practice.* |
|  | *Weeks 5-7 NO LABS* |
| 8 | *Methods of ageing and sexing 1: Sexing adults and ageing juveniles Task: using morphological and quantitative measures sex the elements laid out in front of you, Identify adult versus juvenile teeth and bones. List key of identifiers that you can use in the future.* |
| 9 | *Adult ageing Task: Familiarise yourself with standard methods of ageing in this series of tasks. Record your observations. What age would you assign to this person and why? (Lab test)* |
| 10 | *Dental pathology and MSMs Task: use a routine categorical method to both identify and record dental pathology and muscular-skeletal stress markers. [LAB TEST 10%]* |
| 11. | *Pathology: and trauma Task: Describe and attempt a differential diagnosis of these cases thinking in relation to bone biology (remodeling, resorption, mineralization etc).* |
| 12 | *Population Affinity* Task: Record your observations relevant to population affinity and write a short description of population affinity in the wording appropriate for a forensic case. |
| 13 | Take Home test (3 hrs with an unknown skeleton) |
| 14 | Presentation of your results. 5 minute presentation, 3 minute questions. |