I. OVERVIEW
The following information will appear in the 2009 - 2010 catalog

ANTHR 105 Physical Anthropology Laboratory 1 Unit

Corequisite: Concurrent enrollment in or satisfactory completion of ANTHR 101.

Laboratory investigation of methods and techniques of human evolution and variation, including use of the scientific method, anthropometrics, and an analysis of the developmental and functional morphology of primates. Lines of evidence examined will include the study of population genetics, comparative anatomy and behavior of primates, forensic anthropology, human fossils and their reconstruction. Field trips might be required. Course is applicable to the associate degree. General Education: A., B3, B(lab

IGETC Category: IGETC - 5B

II. LEARNING CONTEXT
Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. COURSE CONTENT

1. Required Content:

2. Required Lab Content:

Required
A. Scientific method
B. Principles of inheritance
   1. Mendelian principles
   2. Punnett Square and probabilities
   3. Problems associated with relationships between behavior and biology
C. Evolutionary mechanisms -- applications
D. Biological anthropology: methods and techniques
   1. Anthropometrics and osteometrics
   2. Observational studies of primates (live or via film)
E. Primate evolution
F. Primate developmental stages
G. Primate skeletal analysis
   1. Human osteology and anatomy
   2. Forensic anthropology
   3. Functional morphology
   4. Taxonomy
   5. "Human" fossil evidence
H. Biocultural evolution
   1. Lithic technologies

B. ENROLLMENT RESTRICTIONS

1. Co-requisites

Concurrent enrollment in or Satisfactory completion of ANTHR 101
2. **Requisite Skills**
   
   Before entering the course, the student will be able to:
   
   a. Principles of evolutionary theory, primate behavior, functional anatomy and the fossil record from lecture, class discussion and outside reading materials.

C. **HOURS AND UNITS**

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D. **METHODS OF INSTRUCTION (TYPICAL)**

Instructors of the course might conduct the course using the following method:

1. Lecture/demonstrate, discussion, individual and group projects, readings, multimedia
2. Use of real and replica primate skeletal materials in directed laboratory exercises.
3. Use of computers to demonstrate data analysis techniques.
4. Laboratory exercises involving application of anthropological data gathering, analysis and interpretation of primate materials.

E. **ASSIGNMENTS (TYPICAL)**

1. **EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS**
   
   *Time spent on coursework in addition to hours of instruction (lecture hours)*
   
   Lab only - no outside-of-class hours required.

2. **EVIDENCE OF CRITICAL THINKING**
   
   *Assignments require the appropriate level of critical thinking*
   
   Typical assignments/exam prompts:
   
   1. Prepare a brief report that presents the results of data collection you performed during the primate behavior research project.
   2. If a person heterozygous for type B blood and the Rh factor mates with a person homozygous for type A blood and Rh negative, what is the chance that their child will have type A blood, Rh positive?
   3. Contrast the cranial and post-cranial features between *Homo erectus* and Neanderthals. Use correct anatomical terminology.
   4. a) Identify the methods that an osteologist uses to determine age and sex of a skeleton. b) Apply these methods to the unknown skeletal material presented here to determine age and sex.

F. **TEXTS AND OTHER READINGS (TYPICAL)**

III. **DESIRED LEARNING**

A. **COURSE GOAL**

As a result of satisfactory completion of this course, the student should be prepared to:

Understand the procedures and applications of physical anthropology in a hands-on situation, as a supplement to information learned in Introductory Physical Anthropology lecture course.

B. **STUDENT LEARNING GOALS**

*Mastery of the following learning goals will enable the student to achieve the overall course goal.*

1. **Required Learning Goals**

   Upon satisfactory completion of this course, the student will be able to:

2. **Lab Learning Goals**

   Upon satisfactory completion of the lab portion of this course, the student will be able to:

   a. Demonstrate knowledge of and ability to apply the scientific method in analysis of primate skeletal materials.

   b. Describe and demonstrate principles of inheritance, population genetics as they relate to human evolution.

   c. Identify bone names and their anatomical features.

   d. Identify and evaluate muscle and skeletal anatomy related to primate locomotor behavior.

   e. Describe and demonstrate appropriate anthropometric techniques in the measurement and analysis of primate skeletal materials.

   f. Analyze primate and human skeletal materials to assess age, sex and individual variability.

   g. Describe and assess functional morphology of primate cranial materials.

   h. Demonstrate ability to classify and place a specimen in its appropriate primate taxonomic category.

   i. Develop and evaluate observational data gathering techniques related to nonhuman primates.

   j. Identify and evaluate the anatomical evolutionary significance of the following specimens: *Australopithecus* [Paranthropus], *Homo habilis*, *Homo erectus* [ergaster], *Homo heidelbergensis*, *Homo neanderthalensis*, *Homo sapiens*

   k. Assess and evaluate lithic technology as they relate to human morphological evolution.

   l. Recommended goal: Identify living nonhuman primates and collect observation data on primate behavior (via field trip).

IV. **METHODS OF ASSESSMENT (TYPICAL)**

A. **FORMATIVE ASSESSMENT**

   1. In class discussion

   2. Laboratory exercises
B. **SUMMATIVE ASSESSMENT**

1. Practical identifications/exams
2. Short essay exams
3. Individual/group projects