	Knowledge, Skills, and Abilities	
Competency Area	**Analyst**	**Diplomate**
Anatomy (gross anatomy, human osteology, comparative osteology, skeletal biology, histology)	Differentiate between osseous and non-osseous material Know bone composition and basic biomechanical properties of bone Identify and side elements and teeth (complete and fragmentary, fetal through adult age) List differences among and be able to interpret tooth numbering systems Be familiar with landmark definitions and identify locations (landmarks, muscle attachments, protuberances, etc.) Collect osteometric data (take measurements) Differentiate human and nonhuman remains (complete and fragmentary) Describe skeletal growth and development (endochondral vs. intramembranous, epiphyseal union, dental development and eruption) Recognize histological features in bone Explain the processes of modeling/remodeling, including the cell types involved in these processes Describe the microscopic structure of bone and the function and cellular precursors of bone cells (osteoblasts, osteocytes, and osteoclasts) Explain bone histology sampling procedures (e.g., sampling sites) Summarize the development of skeletal ossification centers and epiphyses, including timing, sequence, and sexual dimorphism	*All Analyst Competencies PLUS:* Explain the biomechanical characteristics of bone, including material properties and principles associated with bone fracturing and remodeling Apply knowledge of bone remodeling to issues of medicolegal importance (e.g., trauma, fracture healing) Discuss the functional, anatomical, and/or forensic anthropological significance of bony features and landmarks (e.g., named muscles and ligament attaching to bony features, suture intersections, foramina, etc.) Discuss the utility and limitations of histological analyses in forensic anthropology casework

Documentation (Basic Forensic Science)	Compile appropriate data and observations in bench notes Explain the function of bench notes in forensic casework Photo-document skeletal evidence.	*All Analyst Competencies*
Evidence Handling (Basic Forensic Science)	Explain the importance of the chain of custody Describe appropriate chain of custody procedures	*All Analyst Competencies*
Field Recovery	Describe common search methods (line search, etc.) and explain/justify the selection of a particular search method given common scene/environmental conditions Describe the appropriate tools, equipment, software, and techniques to document remains at a scene Define common archaeological terms, principles and excavation techniques.	*All Analyst Competencies PLUS:* Apply and interpret the principles of geoarchaeology, stratigraphy, and soil formation relative to forensic archaeological excavation Discuss the unique characteristics and concerns of managing, recovering, and documenting mass burials and mass fatality scenes
Forensic or Medicolegal Significance	Determine medicolegal significance of remains based on basic anatomy/physical characteristics. Recognize the importance of context for in situ remains	*All Analyst Competencies PLUS:* Evaluate complex scenarios with reference to taphonomic characteristics, anatomical variations, and case contexts to determine medicolegal significance Explain the limitations of methods used in determining medicolegal significance

Taphonomy and the Postmortem Interval	Describe general characteristics of taphonomic features (e.g., scavenging, weathering, alterations resulting from coffin burial, trophy preparation, anatomical preparation) Describe the stages of soft tissue decomposition and bone diagenesis and how variables (scavenging, environmental, climatic, etc.) affect the rate of decomposition and estimation of postmortem interval	*All Analyst Competencies PLUS:* Describe macro- and microscopic changes in skeletal and dental remains derived from common postmortem causes, including biotic, abiotic, thermal, and anthropogenic sources Infer provenience, context, and forensic significance from taphonomic indicators (e.g., former trophy, anatomical, ritual, cemetery, marine, and terrestrial surface remains). Differentiate taphonomic changes to bone from trauma and pathological changes Identify the taphonomic agents responsible for remains dispersal and reconcentration and factors that affect bone survivability Identify the taphonomic agents responsible for common postmortem alterations based on feature characteristics and patterns Interpret factors that may influence the rate, appearance, and pattern of decomposition and diagenesis, including the intrinsic biological variables and extrinsic environmental variables responsible for the change. Explain methods used to estimate the postmortem interval, from recent postmortem changes through radio-isotopic means, including method limitations Apply methods of postmortem interval estimation, and interpret results Explain how foundational research in taphonomy and PMI contributed to the current body of knowledge and practice in forensic anthropology
Processing	Describe appropriate methods to process remains for skeletal analysis	*All Analyst Competencies PLUS:* Discuss processing methods and their potential effects on skeletal analyses (e.g., trauma, elemental analysis, DNA survivability)

MNI and Commingled Assemblages	Sort commingled remains Determine the minimum number of individuals following best practices in the discipline	*All Analyst Competencies PLUS:* Discuss the causes and effects of commingling upon skeletal assemblages and identification efforts Compare methods employed to resolve commingling and their limitations and apply this to an assemblage (e.g., MNI, MNLI, etc.)

Bioprofile	Score, measure, and record metric and morphoscopic/morphological variables according to accepted and defined procedures for estimating bioprofile parameters Use software programs relevant to bioprofile analyses	*All Analyst Competencies PLUS:* Develop a bioprofile, including interpretation and synthesis of multiple methods to estimate and report components of the bioprofile following best practices in the discipline Discuss the morphoscopic/morphological features and/or metric variables, reference populations, and statistical analyses relevant to methods for estimating bioprofile components Incorporate the results of validation studies of age-at-death, sex, and ancestry/population affinity estimation methods into decisions about method selection. Discuss the limitations to forensic age-at-death, sex, ancestry/population affinity, and stature estimation methods Discuss variables that may affect analytical results of methods used to develop the biological profile (e.g., genetics, nutrition, health, secular change, anatomical variation, pathology, taphonomy, trauma) Explain how major historical research in age, sex, ancestry/population affinity, and stature estimation contributed to the current body of knowledge and practice in forensic anthropology Discuss the distinction between biological sex assigned at birth and gender and implications of these categories in forensic casework Discuss the concepts of race, ethnicity, genetic ancestry, and population affinity, and discuss the relevance of these categories to forensic casework

Statistics	Understand foundational concepts in statistics, including standard terminology (e.g., range, interval, standard deviation, mean), types of data (e.g., ordinal, continuous), and basic analyses (e.g., univariate vs. multivariate, discriminant function analysis, linear regression, etc.). Report appropriate statistical information with method results (e.g., intervals, accuracy, probability, confidence level, a priori).	*All Analyst Competencies PLUS:* Explain the application of various statistical models in forensic anthropological casework Interpret statistical outputs generated from commonly used methods in forensic anthropological casework Apply appropriate methods based on methodological limitations and applicability
Pathological Conditions and Anomalies	Describe classic characteristics of common pathological conditions affecting bone Describe classic characteristics of common anatomical variants and skeletal anomalies	*All Analyst Competencies PLUS:* Develop a differential diagnosis and provide the rationale Describe the etiology and underlying mechanism/processes of various pathological conditions in bone, if known. Describe diagnostic characteristics of various diseases and congenital/developmental anomalies that commonly affect bone Differentiate pathological changes from taphonomic and traumatic alterations to bone Distinguish non-pathological skeletal variation from bony pathological conditions or trauma Discuss the potential utility and limitations of using pathological conditions, antemortem trauma, and skeletal anomalies in identification
Personal Identification	Identify features useful for personal ID (e.g., frontal sinus, sternotomy wires, dental fillings and implants) on radiologic images and/or skeletal remains Define radiologic imaging terminology (e.g., radiolucency, radiopacity, radiodensity, etc.) Differentiate hard and soft tissues on imaging Identify skeletal landmarks and features on imaging	*All Analyst Competencies PLUS:* Compare methods for positive/scientific identification versus circumstantial/presumptive identification (e.g., DNA, fingerprint, isotopes, radiographs, facial approximation, medical device implants, etc.) Discuss special procedures and problems relevant to disaster victim identification (DVI)

	Describe basic uses of isotopic testing List the most suitable elements for isotopic analyses Identify gross and radiographic characteristics indicative of osseous healing (i.e., sclerosis, new bone formation) Utilize appropriate identification terminology (i.e., "consistent with", "exclusion") Discuss the factors influencing the recovery of DNA from soft and skeletal tissue List the sampling priority of tissues (blood, muscle, tooth/bone) for DNA testing to obtain appropriate samples for DNA extraction	Use appropriate skeletal and dental features to support a personal identification Conduct a radiographic comparison for identification and report results following best practices in the discipline
Trauma	Describe classic characteristics of major classes of skeletal trauma Describe characteristics of skeletal trauma timing Recognize typical fracture patterns related to trauma classes Recognize typical fracture and burn patterns related to thermal alteration Differentiate traumatic changes to bone from normal skeletal variants, taphonomic and pathological changes, including common sources of pseudotrauma	*All Analyst Competencies PLUS:* Interpret skeletal defects associated with the various trauma types (e.g., blunt, sharp, projectile, blast, thermal), including possible trauma mechanisms (when appropriate) Describe the role of bone biomechanics in skeletal trauma interpretation Discuss the term 'perimortem' in bony versus soft tissue injuries Distinguish accidental vs. non-accidental trauma in pediatric, geriatric, and other vulnerable groups, including their presentation on radiographic images Identify the minimum number of traumatic events, minimum number of impacts, sequence of impacts, directionality, and class characteristics of the potential tool based on bony characteristics (when possible) Discuss current and foundational forensic anthropology research on skeletal trauma, including major/impactful conclusions and study limitations (pediatric and adult) Discuss the limitations of skeletal trauma analyses and recognize what interpretations fall outside the scope of the discipline

Legal Issues, including Expert Testimony & Courtroom Procedures	Summarize landmark court decisions and relevant Federal Rules of Evidence, including how they impact expert witness testimony, evidentiary standards for admissibility, and forensic anthropology practice.	*All Analyst Competencies PLUS:* Describe the role and ethical responsibilities of an expert witness in courtroom proceedings
Professional Standards, Laboratory Operations, & Accreditation	Explain professional standards and guidelines for best practices in Forensic Anthropology, including ANSI/ASB published Standards and Best Practices Recommendations, OSAC-proposed documents.	*All Analyst Competencies PLUS:* Discuss health, safety, and evidence handling relevant to managing a forensic anthropology laboratory. Differentiate certification and accreditation as they pertain to the practice of forensic anthropology Explain the potential effects of bias (e.g., cognitive, contextual) and error on forensic analyses and interpretations and how lab procedures can help mitigate such biases Explain standards as relevant to accreditation and practice (e.g., ISO, OSAC/ASB)
Ethics	Describe how to handle human remains according to ethical standards/protocols Describe actions that demonstrate respect for decedent and family privacy and confidentiality Navigate simple ethical questions (appropriate use of photos, HIPAA, ABFA Code of Ethics) Demonstrate an understanding of the ABFA Code of Ethics and Conduct	*All Analyst Competencies PLUS:* Demonstrate an understanding of ethical principles pertaining to confidentiality, informed consent, and business, research, and professional practices, including compliance with relevant laws, policies, and regulations