



INSTRUCTOR RESOURCE

Functional Anatomy for Occupational Therapy Curriculum

60-hour Curriculum (5-Credit-Hour Course)

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Introduction

This curricular guide is a resource to help design an entry-level occupational therapy (OT) or occupational therapy assistant (OTA) course covering functional anatomy using the complementary *Functional Anatomy for Occupational Therapy (FAOT)* textbook and *OT Guide to Goniometry & MMT (OTG)* eTextbook. There is wide variability for inclusion of functional anatomy content within OT and OTA curricula. Additionally, anatomical resources vary;¹ some programs have access to cadavers and include full dissection while others may rely on models or virtual resources. Students also enter OT and OTA programs with a wide range of exposure to and experience with human anatomy; some have done complete human dissection while others have had minimal formal coursework. Fortunately, FAOT and OTG provide a cohesive, comprehensive functional anatomy resource, geared specifically toward occupational therapy education, that can serve as a core foundation within any curriculum and provide an equitable knowledge base for students to build upon.

Regardless of format, every entry-level OT and OTA program must meet the same foundational anatomy accreditation standard:

“Demonstrate knowledge of the structure and function of the human body to include the biological and physical sciences, neurosciences, kinesiology, and biomechanics.” (B.1.1)²

FAOT and OTG were developed with this educational standard in mind, as essential to future coursework and areas of practice. This curriculum guide was developed with the assumption that functional anatomy is typically positioned early in the curriculum as a foundational course. Intentional efforts have been made to link the content to various areas of practice across the lifespan in the hope that students will be more engaged and realize the future value of mastery of this complex subject matter. Additionally, while the study of functional anatomy inevitably involves a degree of rote memorization and

identification, efforts have been made throughout to apply the content through the lens of occupational therapy and clinical practice. The curriculum design generally aligns with a constructivist pedagogy of learning with Bloom's taxonomy in mind.³

Course Objectives

Objectives for the course can be developed and implemented based on the positioning of the course within the broader curriculum. Some examples include:

- Describe functional anatomy within the broader context of occupational therapy theory and practice.
- Explain foundational concepts of kinesiology, physics, and biomechanics as they apply to purposeful movement and occupational performance.
- Recognize the relationships between the design and function of anatomical structures of the human body.
- Demonstrate a foundational understanding of the nervous system as it relates to functional anatomy.
- Describe the organization of the peripheral nervous system, which supplies innervation for sensorimotor function.
- Explain the importance of sensorimotor function to purposeful movement and the motor performance skills that contribute to occupational performance.
- Describe the bones, joints, and muscles contributing to purposeful movement of the body.
- Identify the primary purposeful movements of the body within the context of occupational performance.
- Explain the relationship of trunk control and postural alignment to functional use of the extremities for occupational performance.
- Begin to develop clinical reasoning to identify musculoskeletal limitations that may affect occupational performance.
- Describe positioning, postural alignment, and functional mobility as they relate to occupational performance.
- Understand the typical human gait pattern as a component of functional mobility.
- Analyze atypical posture and gait patterns and their impact on occupational performance.

- Apply knowledge related to anatomy, biomechanics, and functional mobility to safe patient transfers.
- Demonstrate competency in performing goniometric assessment of the various joints of the body as it relates to occupational performance.
- Demonstrate competency in performing manual muscle testing (MMT) of the various joints of the body as it relates to occupational performance.

Activities and Assessments

The course, as outlined, covers a wide breadth of complex content, and has many components. The author co-teaches the course with an anatomist who oversees the anatomy lab section. Additionally, a graduate assistant is used in labs and for general student support.

Based on the author's experience in teaching doctoral occupational therapy students, there are several repeating activities and assessments, designed to engage various learning styles:

Assigned Reading: Reading from FAOT and/or OTG assigned prior to each module to optimize engagement in lecture and lab.

Lecture: Traditional lecture delivered using customized PowerPoint outlines (provided with instructor resources).

Pre-learning: Learning completed outside of class, either independently or with a lab partner, to optimize time spent in lab with instructor and refine techniques. For example, reviewing of goniometry, MMT, or palpation and practicing prior to lab with instructor feedback. Students come to lab sessions with some familiarity, as opposed to learning techniques “from scratch.” The instructor becomes more of a “coach” on the sidelines, helping students to refine the techniques they have practiced prior to lab.

Lab Activities: Hands-on activities designed to engage kinesthetic learners and apply the content within each module.

Palpation: Identifying and feeling anatomical landmarks beneath the surface of the skin.

Links to Clinical Practice: Discussions, demonstrations, or lab activities that highlight a specific area of OT practice with links to the functional anatomy content.

Quizzes: Quizzes can be integrated weekly based on assigned readings or prior week’s content to keep students accountable for knowledge, help to pace the course, and prepare for larger midterm or final exams. Students have expressed appreciation for weekly quizzes to keep them motivated to engage with each module.

Exams: Traditional summative assessment format with multiple choice questions (provided with instructor resources); multiple exams may be implemented throughout the course, or a summative final exam could be administered. As the course is complex and rigorous, placement of quizzes and exams should be strategic to allow for beneficial pacing.

Anatomy Practical Exams: An assessment method that involves identification of anatomical structures on cadavers, models, or the cadaver photos provided with instructor resources. The author recommends a modified “occupation-based” practical exam format wherein students identify structures based on functional clues. For example, “This structure is essential to lateral pinch, as when using a fork for eating, and is innervated by the ulnar nerve.” (adductor pollicis). Using these clues, structures can be numbered for identification on cadavers, models, virtual images, or medical imaging (e.g., MRI, X-ray).

Goniometry/MMT Competency Exam: Used to assess competency for goniometry and manual muscle testing (MMT). The author recommends two separate competency exams—one for the upper extremity and one for the lower extremity. Grading rubrics are provided and can be modified. The author recommends a “pass/fail” scoring system for competency exams with multiple attempts provided.

Occupational Analysis Capstone Assignment: A culminating written assignment that involves a detailed analysis of a specific occupation. The assignment encourages the integration and synthesis of various concepts presented within the course and ensures that students have made appropriate links to activity analysis.

Equipment and Materials

To implement the curriculum as it is presented, the following equipment and materials are recommended:

- Classroom with smartboard or other type of projector to display PowerPoint presentations, plinth tables, and clinical stools.
- A large, medium, and small goniometer for each student.

- Anatomical resources:
 - In the opinion of the author, the use of cadavers is highly beneficial and cannot be replicated. If you do not have a cadaver lab onsite, consider other labs in the area for a “field trip” (or several field trips).
 - If using a cadaver lab, gowns and gloves may be provided or requested for purchase by each student.
 - Virtual anatomy resources—Anatomage table, app-based technology, or online resources that have been “vetted” for quality.
 - Models—at least for each regional segment of the body—shoulder, forearm, hand, pelvis/hip, knee, ankle/foot, spine, head/neck.
- Gait belts (for patient transfer labs)
- Simulated patient environments (bathroom, bedroom, acute care bed) if available for lab simulations
- Digital pressure mapping technology (to illustrate pressure on pelvis/hip or feet in sitting or standing positions)
- Roll of paper 3' wide (for gait analysis)
- Washable paint (for gait analysis)

Syllabus Template

The following syllabus outlines a 5-credit-hour graduate level OT course that includes a weekly lecture, clinical lab, and anatomy lab. The clinical lab typically involves the development of clinical techniques within each module, for example, palpation, goniometry, and MMT of the shoulder. The anatomy lab is used for guided exploration of anatomical resources which will vary within each program. However, the author feels a dedicated time of exploratory learning is essential whether using cadavers, models, an Anatomage table or other virtual resource, or various print resources. It is also recommended that regional anatomy be reviewed *the week before* it is presented in lecture and clinical lab to ensure students have a foundational knowledge prior to its application. Broadly, introductory concepts are presented first, followed by trunk and head, upper extremity, and lower extremity. A summative module addresses analysis of the body as a whole—posture, positioning, gait, functional mobility, and patient transfers. The syllabus outlines course objectives, customizable grade distribution, a weekly schedule, accreditation standards and related assessments, as well as descriptions of various assignments. It can be modified and customized to meet instructor and program needs. A description and recommendations for each module are presented following the syllabus.