BioNeurofeedback Treatment Center

INSTRUCTOR: Celeste De Bease, PhD, BCIAC email: DrDeBease@BioNeurofeedback.com

WIDENER UNIVERSITY'S GENERAL BIOFEEDBACK BCIA PREPARATORY POWERPOINT COURSE SYLLABUS

This course material is designed to meet the didactic requirements for BCIA (Biofeedback Certification Institute of America) certification in General Biofeedback.

Course Text:
Schwartz, M. & Andrasik, F., 4rd ed. (2016). Biofeedback-A Practitioner's Guide, Guilford, New York.

Course Educational material:
Biofeedback Tutor; Dr. Fred Shaffer, Biosource Software. (can be purchased from my web site http://www.bioneurofeedback.com/courses.htm or any other approved vendor)

Lecture 1 Orientation and Overview Psychophysiological Paradigms

Theoretical concepts: history of biofeedback & forces leading to its emergence
Operant conditioning of physiological processes: from Skinner to Miller
Classical conditioning of physiological processes: PNI
The Stress-Disease Model
We will examine an overview of the mind's complex processes and gain some perspective on the massive body of knowledge that surrounds the topic of how the mind and body interact in the areas of wellness and disease.
Readings: Schwartz: 1, 2
Shaffer: Core: History, Concepts
Selected web readings:
What Kinds of Problems Can Biofeedback Help
https://bio-medical.com/resources/what-kinds-of-problems-can-biofeedback-help/

Lecture 2 Stress, Coping and Illness

The central and peripheral nervous systems
The autonomic nervous system and its innervations of skeletal, cardio, GI and respiratory systems
The Stress Response: Acute/Chronic; Canon, Selye
The Relaxation Response: Benson
Dysfunction caused by hyperarousal of autonomic responses
Overview of psychophysiological remedies: why and how they work
Readings: Schwartz chapter 12 [Relaxation Today], 16 [this chapter covers negative rxns]
Shaffer: Core: Psychophysiology; Stress

Lecture 3 Psychophysiological Recording

Biofeedback and essential electronic terms/concepts
Working with the equipment: attaching temperature probe & SEMG sensors: frontal, trapezius, masseter muscles
Working with the signal: means, standard deviations, artifact and assessments
Essential electronic terms and concepts for biofeedback applications
Working with the patient: patient orientation/preparation
Readings: Schwartz chapters 3 [Primer…BFB Instrumentation]
Shaffer: Core: Electricity

Lecture 4 Research Methodology

Research Designs and concepts. Fundamental statistics. Some key research studies for the use and efficacy of biofeedback.
Readings: Schwartz: chapter 19
Shaffer: Core:Research

4R Template for Developing Guidelines for the Evaluation of the Clinical Efficacy of Psychophysiological Interventions
4R Evidence based practice in Biofeedback and Neurofeedback

Lecture 5 SEMG Applications

Psychophysiological Function & Pathology: Skeletal Muscle System
Dysfunction of the skeletal system: tension headache, TMJ, chronic pain, CNS injuries
Muscle anatomy and physiology: overview
Psychophysiological recordings: SEMG biofeedback - surface Electromyography
SEMG biofeedback sensors and sensor placements
Assessment of muscular tension; co-contraction and dysponesis
Readings: Schwartz chapters 4, 20, 21, 31, 36
Shaffer: Anatomy: Skeletal Muscles
Shaffer: Hardware: EMG
Shaffer: Applications: Musculoskeletal
Selected web readings:
http://bio-medical.com/resources/emg-or-electromyography/
EMG or Electromyography

Lecture 6 ANS Applications – Electrodermal Activity

Psychophysiological Function & Pathology: Somatic Anxiety
Electrodermal Activity
Comparison of somatic anxiety and emotional/cognitive anxiety
Skin Conductance Activity (SCA) or GSR biofeedback (Galvanic Skin Response)
Assessments of GSR patterns
Readings: Shaffer: Anatomy: Electrodermal

Selected web readings: http://bio-medical.com/resources/gsr-or-galvanic-skin-response/
GSR or Galvanic Skin Response

Lecture 7 ANS Applications – Cardiovascular/Thermal

Psychophysiological Function & Pathology: Vascular System
Dysfunction of the Vascular system: Raynauds, migraine, hypertension, neuropathies & diabetes
Peripheral Temperature biofeedback
Assessment of vasoconstriction patterns
Introduction to Heart Rate Variability biofeedback
Methods of recording HRV

Readings: Schwartz chapters 5 (section on HRV), 13, 22, 23
Shaffer: Anatomy: Cardiovascular
Shaffer: Hardware: Cardiovascular
Shaffer: Applications: Cardiovascular

Selected web readings: Temperature Biofeedback Articles: *Hand Warming Explanation*
http://bio-medical.com/resources/temperature-biofeedback-hand-warming-explanation/

Lecture 8 Respiratory Applications

Respiratory Psychophysiology
Breathe patterns and their meaning
Assessment of respiratory patterns

Readings: Schwartz: chapter 5 (up to HRV)
Shaffer: Anatomy: Respiration
Shaffer: Hardware: Respiration
Shaffer: Applications: Respiration

Lecture 9 Intervention & Intake

Psychophysiological Profiling – the diagnostic intake assessment
Differential diagnostics is an all-important skill for the development of cohesive treatment plans.
The PSP is THE most important diagnostic tool for the psychophysiologist.
Conducting a PSP, Interpreting a PSP, Using other diagnostic tools to complement and supplement the PSP
Readings: Schwartz chapters 8 and 14
Selected web reading: http://www.futurehealth.org/psp.htm Psychophysiological Stress Profiling (PSP) © 1995 Rob Kall

Lecture 10 Professional Conduct

Licensure and Certification
Clinician responsibility and competence
Supervision compared to consultation (mentoring)
Legal and Ethical issues
Record keeping in psychophysiology
Readings: Schwartz chapters 17 and 18
Shaffer: Core: Ethics
10R - Professional Standards and Ethical Principles of Biofeedback