

NEW MIND WEBCOURSE OUTLINE

Module 1 (4hrs) Cost =\$240.00

Chapter I PERSPECTIVES IN NEUROFEEDBACK

HISTORY AND DEVELOPMENT OF EEG BIOFEEDBACK

ASSUMPTIONS UNDERLYING THE FIELD

1. *Barry Serman & Joel Lubar (Margaret Ayers):* The Neuropsychological Arousal Model
2. *Joe Kamiya & Tom Budzynski:* A Psychological Model
3. *Robert Thatcher & Jay Gunkleman:* qEEG Medical Perspective
4. *Siegfried and Susan Othmer:* Regulatory Systems model
5. *Elmer Green, Gene Peniston, & Nancy White:* The Alpha-Theta Model
6. *Les Femi & Adam Crane:* The Profound Attention Model
7. *Valdeen Brown*
8. *Anna Wise:* The High Performance Mind

Chapter II LEARNING THEORY

1. Learning Theory and EEG Training
2. Operant conditioning
 - A. Reinforcement
 - B. Establishing operations
 - C. Shaping
 - D. Extinction
 - E. Variable ratio reinforcement schedule
 - F. Ratio strain
 - G. Dichotomous reinforcement
 - H. Proportional reinforcement
 - I. Tones
 - J. Optimal Training
3. Classical conditioning

- A. Neutral stimulus
- B. Reflexive response
- C. Subcortical system
- D. Amygdalic network
- E. Systematic Desensitization
- F. Post Reward Synchronization
- G. Length of Training

Take test # 1

Module 2 (4hrs) Cost = \$240.00

Chapter III BASIC NEUROANATOMY

1. Cerebrum (beta)
2. Limbic System (theta)
3. Brain Stem and Cerebellum (delta)
4. Thalamus (alpha)
5. Somatosensory Cortex (SMR)
6. Split Brain
7. Neuron
8. Synapse
9. Neurotransmitter Systems
10. Neurotransmitter EEG Connection
11. Cortical Systems: Pyramidal Cells, Cell Columns, and Layers
12. Fiber Systems
13. Brodmann's Areas
14. Projection Tracts
15. Thalamic Projection System
16. Thalamic Gating

Take Test #2

Chapter IV EEG AND ELECTROPHYSIOLOGY

1. Electrophysiology-.Neocortical Dynamics: Oscillators, Wavefronts, and Networks Oscillators
 - A. Excitatory postsynaptic membrane
 - B. Inhibitory postsynaptic potential
 - C. Standing wavefronts
2. Global, Regional, & Local Activity
 - A. Resonant loops
 - A1. Local resonances
 - A2. Regional resonances
 - A3. Global resonances
 - B. Standing Waves
3. Hypercoupling, Hypocoupling, and Coherence

Take Test #3

Module 3 (8hrs) Cost = \$480.00

Chapter V MORPHOLOGY OF WAVEFORMS

1. Rhythmic delta
2. Non-rhythmic delta
3. Rhythmic Theta
4. Non-rhythmic Theta
5. Alpha
6. Beta
7. Spikes & Sharp Waves
8. *Kappa*
9. *Lambda*
10. *Mu*
11. *Gamma & Sheer Rhythms*

12. *Sleep Spindles etc*

13. Slow Cortical Potentials

Chapter VI ARTIFACTS

1. Poor connections
 - A. Clean scalp
 - B. Hair out of way
 - C. Sufficient paste
 - D. Proper Grounding
2. Eye blinks
3. Eye Movement
4. Heat from scalp
5. Gum Chewing
6. Gritting the Teeth
7. Holding Tongue at roof of Mouth
8. Swallowing
9. Physical Movement
10. Heart Beat
11. Scalp Tension
12. Electrostatic interference

Chapter VII MONTAGES

1. Reference areas
 - A. Ear lobes
 - A1. Linked-ears
 - A2. Single Ear
 - B. Mastoid
2. Ground
4. Bipolar Montage or Serial Montage
5. 10-20 system
6. Spectral analysis

Chapter VIII INSTRUMENTATION

1. Concepts and Terms in Electronics
 - A. Voltage
 - B. Amperage
 - C. Resistance
 - D. Power
 - E. Current
 - F. Impedance
 - G. Capacitance
 - H. Phase
2. How Your Equipment Works
 - A. Waveforms
 - B. Amplifier
 - C. Frequency ranges
 - D. Filters
3. Differences in Equipment
 - A. Number of leads
 - B. Type and number of filters
 - C. Viewing raw EEG
 - D. Dichotomous & Continuous feedback
 - E. Graphics
 - F. Display
 - G. Session Averaging
 - H. Voltage
 - H1. Peak to Peak
 - H2. RMS (root mean square)
4. Sources of Artifact - Electrostatic Interference & 60-cycle hum
5. Buying Equipment
 - A. Service Is #1
 - B. Manufacturer's theoretical perspective with respect to EEG
 - C. Practice on yourself

C. The “Which computer is right game”

Take test # 4

Module 4 (2hrs) Cost = \$120.00

CHAPTER IX RESEARCH AND STATISTICS

1. Design
 - A. Multivariate
 - B. Correlational
 - C. Case study
2. Reading Research Articles
 - A. The Structure of the Research Article
 - B. Abstract
 - C. Introduction
 - D. Literature review.
 - E. Methods section.
 - F. Results
 - G. The discussion
3. The Experiment
 - A. Causal relationship
 - B. Co variance
 - C. Control
 - D. Measurability
 - E. Observation.
 - F. Groups of subjects
 - G. Experimental group
 - H. Control group
 - I. Dependent variable
 - J. Independent variable
 - K. Random assignment
 - L. Placebo effect

- M. Double-blind
- 4. Statistics
 - A. Average
 - B. Mean
 - D. Variance
 - E. Range
 - F. Standard deviation
 - G. Coefficient of variability
 - H. parametric tests
 - G1. t-test
 - G2. ANOVA, or analysis of variance
 - G3. MANOVA or multivariate analysis of variance
 - G4. "p" or alpha level
 - G5. F-ratio
 - G6. type one or type two error
 - G7. Correlations
 - G8. Pearson product-moment correlation
 - I. Coefficient of determination

Take test # 5

Module 5 (2hrs) Cost = \$120.00

Chapter X PSYCHOPHARMACOLOGY

- 1. Psychopharmacology and EEG
- 2. Drug Classifications
 - A. Sedative-Hypnotics
 - A1. benzodiazapines
 - A2. Alcohol
 - B. Behavioral Stimulants and Convulsants
 - B1. Amphetamines
 - B2. MAO's

- B3. Tricyclics
- B4. SSRI's
- B5. Caffeine
- B6. Cocaine
- B7. Wellbutrin
- C. Narcotic Analgesics
 - C1. Opiates
- D. Antipsychotic Agents
- E. Psychedelics and Hallucinogens
 - E1. Marijuana

Take test # 6

MODULE 6 (12HRS) Cost= \$720.00

CHAPTER XI INTAKE, EVALUATION, AND TREATMENT PLANNING

1. Intake
2. Initial Interview
3. History
4. Forms
5. Testing
6. History and Meds
7. Initial Assessment Without qEEG
8. Taking Baselines
9. Hemispheric Dominance
10. Monopolar Analysis: The MiniQ
11. Treatment Planning
12. Ongoing Assessment
13. When to Evaluate Progress
14. Keeping Record
15. The Big Picture
16. Plasticity

17. Do What Works
18. Training Offsite
19. The Brain Has Its Own Wisdom
20. How Often Should I Come In?
21. Outsources
22. Session Myth
23. Client Etiquette
24. Client Resources
25. AVE

CHAPTER XII QEEG BRAIN MAPS

1. Overview
 - A. Absolute Power
 - B. Relative Power
 - C. Asymmetry
 - D. Coherence
 - E. One Hertz Bins

Take test # 7

CHAPTER XIII DISORDERS AND PROTOCOLS PART I

1. Seizure
2. AD/HD
3. Headaches, Chronic Pain, TMJ
4. Depression
5. TBI, Stroke, Coma, Dementia
6. Parkinson's, Tourettes
7. Schizophrenia

Take test # 8

CHAPTER XIV DISORDERS AND PROTOCOLS PART II

1. Anxiety, PTSD, OCD
2. Fibromyalgia, Chronic Fatigue, Lyme's Disease
3. Hypertension
4. Dissociative Disorder
5. Bipolar Disorder
6. Addictions

Take test # 9

MODULE 7 (4hrs) Cost = \$240.00

CHAPTER XV PROFESSIONAL ETHICS

1. Ethics and EEG Biofeedback
2. Respect, Responsibility, Competence, Confidentiality
3. Informed Consent
4. Recognizing Your Limitations
5. Professional Competence
6. Liability
7. BCIA Requirements
8. Continuing Education Units
9. Record Keeping
10. Healthcare Providers

Take test # 10

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Introduction to EEG Biofeedback (Neurofeedback)

Where is this written down? That is the question I get at every one of my workshops. Many people entering the field are frustrated because there is no basic source to draw upon. Although books exist, they do not offer the kind of specific detail about doing neurofeedback that people are often seeking. The Synapse Institute of Atlanta now provides a comprehensive web course which is BCIA approved. This interactive course is designed to be the “how to” guide that leads you to be prepared for certification.

According to the Biofeedback Association of America “EEG Biofeedback is employed to modify the electrical activity of the CNS including EEG, event related potentials, slow cortical potentials and other electrical activity either of subcortical or cortical origin.” In addition they state that the goals of EEG Biofeedback are as follows: “The alteration of brain functioning determined from comparing the patient’s Quantitative EEG with databases of normal populations.” This course is an explication of the preceding definition and goal as defined by that certifying body. It is designed to assist those who wish to become certified in obtaining their didactic hours toward that goal. It is written in a manner which explains how to do neurofeedback as well as the theory and research behind it.

In addition to this material you will be doing supplementary reading in James Evans and Andrew Abarbanel’s Introduction to Quantitative EEG and Neurofeedback. You will also do supplementary readings in a special edition of Clinical Electroencephalography. This course is written specifically to be used in conjunction with these two other publications to provide a detailed understanding of neurofeedback and how it is applied. A course syllabus is provided to indicate what you should read in the supplementary readings and when you should read them. At the end of each section you will take a multiple choice test designed to test your knowledge of that section. If you fail to pass the multiple choice test you will be asked to go back and review the material again and be given a second test. If you fail to pass that test the instructor will

contact you and will determine what remedial steps need to be taken for you to pass that section of the course.

How to use this course

The course is divided into modules. It is suggested that you read the course material and suggested readings for each module before continuing on to the next module.

If you have questions about the information, sign onto the discussion group and ask questions. The course instructor will be monitoring the discussion group site and will be answering any questions on a regular basis. It is important that you read the suggested readings in the books, journals and referenced articles before getting a “quick answer” from the instructor or fellow students.

Review any articles or journals that are cited if you are interested in the original research. Once you are comfortable with the material and feel that you are ready to take the exam, you can log onto take the tests section for each module at take the exam. Note that you will only be able to log on one time to any individual test. Forty five (45) minutes will be allowed for each module exam. You will be contacted within 48 Business hours of the results. If you have not received notice during this time please contact the instructor. As noted above if you do not pass the exam you should start over on the module and a second exam will be given. If you fail that exam the instructor will contact you about remedial work that can be done.