Class Quote:
“We have the ability to change the body's functioning with thought, with emotion, and with memory”
Robert Sapolsky, Stanford biologist (who studies baboons not humans)

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Required Texts:
Mindfulness Approach to Biofeedback, Inna Khazan 2013
Mind’s Machine 2012, Watson & Breedlove
Articles on Learning Suite

Recommended Texts:
Stress Management, Lehrer 2007 (good empirical review of key methods used to reduce stress)

Learning Outcomes:
1. Understand basic principles of biofeedback, psychophysiology, and stress and health
2. Understand and use adjunctive interventions such as mindfulness, Autogenics, PMR, etc.
3. Understand and use basic principles of psychophysiological recording
4. Understand and use heart rate variability (HRV) biofeedback
5. Understand and use hand temperature and skin conductance biofeedback
6. Understand and use surface electromyography biofeedback
7. Understand principles of EEG
8. Understand and apply ethical principles related to the practice of biofeedback within your given profession

Content:
The purpose of this class is to prepare you to take the BCIA exam (100 multiple choice questions) that is part of the requirements to become board certified in biofeedback (BCB). Therefore, the focus and grading for this class will be primarily content oriented.

However, to learn something it is important to have ‘hands on’ experience. We will demonstrate in class heart rate variability biofeedback (heart rate and respiration), temperature biofeedback, skin conductance biofeedback, and muscle tension biofeedback (surface electromyography). Part of your homework assignments will be to practice these modalities.

We will review EEG biofeedback but not demonstrate it, as this is a class about biofeedback and not neurofeedback. However, the BCIA exam for biofeedback requires you to understand the basics of EEG so we cover that material in class.
Grading:
The BCIA exam is hard. There are in depth questions on physiology as well as difficult questions on
biofeedback. Therefore, this class will go into these topics in detail and the exams will ask detailed and
specific questions. About 70% of the grade will be content oriented and tested via multiple-choice exams
(just like the BCIA exam) in the testing center (1 Midterm and 1 Final Exam, both in the testing center).
The other 30% of the grade will come from biofeedback practice experiences and quizzes. I will begin
most classes with a brief 5 question multiple choice quiz to encourage reading before class and to gauge
understanding.

SCHEDULE

4/30 Overview/History of Biofeedback, Homeostasis and Learning, Research Methods (Watson 9 & 13)

5/5 Brain Regulation of Autonomic and Endocrine Functioning (Watson 2, 8)

5/7 Stress and Health (Watson 11)

5/12 Adjunctive Interventions: Mindfulness, PMR, Autogenics, etc. (Khazan 1; counseling center web)

5/14 Psychophysiological Recording (Khazan 2 and 3; Peek chapter 5 (Schwartz))

5/19 Biofeedback Assessment, Profiles, & Treatment Planning (Khazan 4 to 7)

MIDTERM in Testing Center

5/21 ANS applications: Heart rate and Respiration (HRV) biofeedback, Pathophysiology and Treatment
Protocols (Khazan 8 & 9; Lehrer; Thought Technology HRV Document)

5/28 ANS applications: Temperature and Skin Conductance Biofeedback, Pathophysiology and Treatment
Protocols (Khazan 11 & 12)

6/2 sEMG Anatomy and Pathophysiology (Watson 5; Thought Technology sEMG Document)

6/4 sEMG Applications and Treatment Protocols (Khazan 10)

6/9 EEG Principles (Watson 3 & 4; Neumann chap. 5(Schwartz))

6/11 Ethics and Professional Conduct (APA ethics)

6/16 Student Protocol Demonstrations

FINAL in Testing Center