**COURSE TITLE:** **EXERCISE & THE BRAIN FOR PEAK PERFORMANCE**

**WA CLOCK HRS:** **30**
**OREGON PDUs:** **30**
**PENNSYLVANIA ACT 48:** **30**

**NO. OF CREDITS:** **3 QUARTER CREDITS**
**[semester equivalent = 2.00 credits]**

**INSTRUCTOR:** **Brenda McKinney**
**bbbrain@comcast.net**

**COURSE DESCRIPTION:**
Did you know you can beat stress, lift your mood, fight memory loss, sharpen your intellect, and function better than ever simply by elevating your heart rate and breaking a sweat? The evidence is incontrovertible: Aerobic exercise can physically remodel your brain for peak performance. The text we will be using, SPARK, embarks upon a fascinating and entertaining journey through the mind-body connection, presenting startling research to prove that exercise is truly our defense against everything from depression to ADD to addiction to aggression to menopause to Alzheimer's. This is a timely course for the decade. The book is filled with amazing case studies including the revolutionary fitness program in Naperville, Illinois, which has put this school district of 19,000 kids first in the world of science test scores. SPARK, by John Ratey, is the first book to explore comprehensively the connection between exercise and the brain. It will change forever the way you think about exercise, aging, or, for that matter, simply the way you think. Don't miss the opportunity to be a part of this groundbreaking research. You will be able to share this with your family, your students, your aging parents; everyone can benefit. Join me today; don't put off this opportunity. Perfect for teachers, administrators, parents, everyone interested in their health.

**LEARNING OUTCOMES:** Upon completion of this course, participants will have:

1. Explored key findings about how your brain works and how exercise works.
2. Gained an understanding of the neurological and behavioral changes in the brain.
3. Discovered the brain body connections as related to overall brain function
4. Gained an understanding of how exercise can improve learning, mood, and work ethics.
5. Experienced the power of beginning or continuing an exercise program.
6. Learned that exercise physically remodels the brain
7. Learned how exercise is linked exercise with depression, AD/HD, addiction, and aging.

**COURSE REQUIREMENTS:**
Completion of all specified assignments is required for issuance of hours or credit. The Heritage Institute does not award partial credit.

The use of artificial intelligence is not permitted. Assignment responses found to be generated by AI will not be accepted.

**HOURS EARNED:**
Completing the basic assignments (Section A. Information Acquisition) for this course automatically earns participants their choice of CEUs (Continuing Education Units), Washington State Clock Hours, Oregon PDUs, or Pennsylvania ACT 48 Hours. The Heritage Institute offers CEUs and is an approved provider of Washington State Clock Hours, Oregon PDUs, and Pennsylvania ACT 48 Hours.

**UNIVERSITY QUARTER CREDIT INFORMATION**

**REQUIREMENTS FOR UNIVERSITY QUARTER CREDIT**
Continuing Education Quarter credits are awarded by Antioch University Seattle (AUS). AUS requires 75% or better for credit at the 400 level and 85% or better to issue credit at the 500 level. These criteria refer both to the amount and quality of work submitted.

1. Completion of Information Acquisition assignments 30%
2. Completion of Learning Application assignments 40%
3. Completion of Integration Paper assignment 30%

**CREDIT/NO CREDIT (No Letter Grades or Numeric Equivalents on Transcripts)**
Antioch University Seattle (AUS) Continuing Education Quarter credit is offered on a Credit/No Credit basis; neither letter grades nor numeric equivalents are on a transcript. 400 level credit is equal to a "C" or better, 500 level credit is equal to a "B" or better. This information is on the back of the transcript.

AUS Continuing Education quarter credits may or may not be accepted into degree programs. Prior to registering, determine with your district personnel, department head, or state education office the acceptability of these credits for your purpose.

**ADDITIONAL COURSE INFORMATION**

**REQUIRED TEXT**
Purchase the required text ***SPARK. The Revolutionary New Science of Exercise and the Brain*** by John Ratey, MD, from Amazon.com

None. All reading is online.

**MATERIALS FEE**
Text, SPARK. The Revolutionary New Science of Exercise and the Brain, is approximately$10, from Amazon.com.

**ASSIGNMENTS REQUIRED FOR HOURS OR UNIVERSITY QUARTER CREDIT**

**A. INFORMATION ACQUISITION**
Assignments done in a course forum will show responses from all educators who have or are taking the course independently. Feel free to read and respond to others' comments.
Group participants can only view and respond to their group members in the Forum.

**Assignment #1: Introduce Yourself**
For those participating in Group Collaboration, you must read and follow the instructions outlined in the Group Collaboration Guidelines. Click on the link for Guidelines. https://www.hol.edu/about/group-collaboration

- Assignment #1, each participant must complete this assignment independently.
- There should be a minimum of (4) four group meetings during which the course content is discussed.
- Teleconferences or live meetings are acceptable. A good videoconference option is Zoom (https://zoom.us/).
- Each participant must attend at least 75% of the group meetings (a minimum of 3 of 4 meetings).

You must complete your introduction before moving on to other assignments.

Introduce yourself with a background profile:

- What led you to choose teaching as your profession
- Your current professional situation
- What brings you the most joy in your work
- What led you to choose this class?
- What outcomes do you hope to achieve through this coursework

**Assignment #2: SPARK Blog**
Go to the blog for SPARK, The Revolutionary New Science of Exercise and the Brain

- Choose to watch three articles from the link below
  - http://johnratey.com/2014articles.php
- Write a brief synopsis of your top three:
  - Informational, new learning, or research that applied to your own experience

- Research that inspired you to keep reading or watching

**Assignment #3: Revolutionary New Science**

- In the text, SPARK, The Revolutionary New Science of Exercise and the Brain, read pages 3-56. Pay special to the dramatic effects of exercise on mind body learning.
- Watch Dr. Ratey's to learn how to transform learning through exercise

  https://www.youtube.com/embed/hBSVZdTQmDs
- Respond to the following with a written response or a mind map:
  - Study that gave you insight into the power of exercise on learning
  - Role of exercise in plasticity and the connection with learning
  - Process of learning and why is movement so critical
  - Areas of the brain are involved in the thinking brain

**Assignment #4: Effects of Stress & Anxiety**

Why do we need to redefine stress and how does it affect learning? Powerful learning in this section.

- In your text, read 57-140 to understand the effects of stress, anxiety on the brain and body
- Watch the video on Exercise, Stress and the Brain, Dr. Paul Thompson

https://www.youtube.com/embed/xpy_rAWSWkA

- Watch the video on How to Turn Stress into an Advantage

https://www.youtube.com/embed/YCzbjsYc03Q

- Respond while considering your videos, reading, and the following questions:
  - Why do we need to redefine stress and how does it affect learning in the classroom?
  - What success has linked exercise to depression?
  - Why is exercise the best defense against mood disorders?
  - Why is it so important to understand that what affects the mind affects the body?

**Assignment #5: Role of Exercise in Addictions/AD/HD**

- In your text read pages 141-190 about the role of exercise with AD/HD and addictions.
- Respond to the following with a written response, graphic organizer, or mind map
- Consider the following:
  - What was the most significant case study for you?
  - What is the underlying connection with AD/HD and exercise?
  - What is the process of reclaiming self-control for an addict?
  - What tales of dependence helped you understand the continuing cycle for addicts?
  - How is it possible for exercise to replace a high?

**Assignment #6: Hormones**

- In your text read pages 191-243 on hormones and aging
- Watch the video on The Formula for Successful Aginghttps://www.youtube.com/embed/nTywMD-elNg
  - Then respond to the reading and video
    - Effect of exercise on women's health
    - New expectations for pregnant mothers and PMS
    - Depression and the new link with exercise
    - Cognitive decline (we all want to know)
    - Elements of the life list and will that improve your lifestyle?

**Assignment #7: Lifestyle Journal**

- In your text read pages 245-270

- Watch the video on The Best Exercise for Your Brain
  https://www.youtube.com/embed/v6n9snBQTic

- Then set up a lifestyle journal that you will keep for fifteen days
  - The journal will include your physical and mental exercise regimen for fifteen days. This will be based on your fitness level.
  - Make sure you read carefully before you begin.
  - If you are continuing a work-out schedule, make sure to take notice of the adjustments noted by Ratey (cardio bursts)
  - Plan to do ONE mental exercise each day
- Break your journal into four sections:

1. aerobic training - see pages 240-241
2. strength training - see page 241
3. balance and flexibility - pages 241-242
4. mental exercise - page 241

**ADDITIONAL ASSIGNMENTS REQUIRED FOR UNIVERSITY QUARTER CREDIT**

**B. LEARNING APPLICATION**
In this section, you will apply your learning to your professional situation. This course assumes that most participants are classroom teachers who have access to students. If you do not have a classroom available to you, please contact the instructor for course modifications. Assignments done in a course forum will show responses from all educators who have or are taking the course independently. ?Feel free to read and respond to others' comments. Group participants can only view and respond to their group members in the Forum.

**Assignment #8: (Required for 400 & 500 Level)**
**?**When the 15 days are complete, summarize your regular exercise program and how it has benefited you.

Analyze each of the required areas.

- Improvements needed for overall wellness
- Greatest successes from your journal no matter how small
- Motivation to continue your workouts and help them become lifetime commitments

**Assignment #9: (Required for 400 & 500 Level)**
Create and implement a lesson reflecting what you've learned in this course in order to improve learning for learning for all students in the area of exercise and wellness.

Complete one (1) of the following options:

**Option A)**

1. Use the Heritage Institute lesson template or one from your district. (if you are not in the classroom or it is summer, write a 2 - page summary of how you would implement in a classroom setting including how you would solve the challenges you might meet).
2. Submit your lesson with a 2-page description of what worked well and what you could improve.
3. Indicate your permission to THI by pasting one of these statements into your email:

"I give the Heritage Institute permission to publish this lesson plan in The Heritage Institute Lesson Plan Library, a feature available only to active learners taking THI courses."

"I DO NOT give THI permission to publish this lesson plan in the Heritage Institute Lesson Plan Library."

**OR**

**Option B)**
Create a lesson reflecting what you've learned in this course (do not implement).

1. Write a 2 -page article concerning an educational area of interest to you. This article can be an opinion piece, a call-to-action, a personal story or a combination of these.
2. When sending your lesson and your article, paste one of these statements into your email.

"I give the Heritage Institute permission to publish this lesson plan in The Heritage Institute Lesson Plan Library, a feature available only to active learners taking THI courses."

"I DO NOT give THI permission to publish this lesson plan in the Heritage Institute Lesson Plan Library."

**Assignment #10: (Required for 400 & 500 Level)**

- Share this information with another teacher taking this course or a friend/colleague
    - Encourage someone else to adopt and understand the critical components of this learning
    - Detail the elements of this course that you shared in your response
    - Follow up with how the learning was received and any further research that they would like to hear
    - How did this experience increase your learning?

**Assignment #11: (500 Level ONLY)**
In addition to the 400 level assignments, complete one of the following assignment options:

**Option A)**
Create a PowerPoint presentation for your staff based on this course and focused on how exercise could change your school.

- Save this as a PDF.
- The PPT must include graphics, color, at least 20 slides, and be presentable to the group of your choice.
- It also must have a bibliography slide and an activity that involves your audience.
- The PPT must include graphics, pictures, one chart, and be brain friendly to the audience

**or**

**Option B)**
Choose five videos that could be used to motivate, inform or inspire teachers, friends, students to exercise?. Explain each of your choices, provide the link, and how you would use in your classes.

**or**
**Option C)**
Design your own assignment with instructor's prior approval.

**C. INTEGRATION PAPER**
Assignment #12: (Required for 400 and 500 Level)

**SELF REFLECTION & INTEGRATION PAPER**
**(Please do not write this paper until you've completed all of your other assignments)**

Write a 400-500 word Integration Paper answering these 5 questions:

1. What did you learn vs. what you expected to learn from this course?
2. What aspects of the course were most helpful and why?
3. What further knowledge and skills in this general area do you feel you need?
4. How, when and where will you use what you have learned?
5. How and with what other school or community members might you share what you learned?

**INSTRUCTOR COMMENTS ON YOUR WORK:**

Instructors will comment on each assignment. If you do not hear from the instructor within a few days of posting your assignment, please get in touch with them immediately.

**QUALIFICATIONS FOR TEACHING THIS COURSE:**
Brenda McKinney, CEO of Vancouver, WA based BrainVolution, is a developer and dynamic facilitator of workshops that teach practical thinking and learning tools for raising student achievement with the brain in mind. She has trained educators throughout the Pacific Northwest and is a popular presenter because of her ability to motivate, make things fun, and teach practical techniques for the classroom that can be used immediately. Brenda continues to read hundreds of books and articles on the subject of neuroscience and searches for the answer to success for every student. Her work with at-risk students and those with reading problems have made her a popular speaker at the state, regional and national level.

Brenda is able to synthesize the new research and continues to address the role of how to use the latest findings to create high achievement classroom. She brings 30+ years of experience at the elementary, middle school, high school and university level as a mentor teacher, consultant, motivational speaker, university instructor, and reading specialist. Brenda has her Master's in Education from Washington State University and is nationally certified in Brain Based Learning through the renowned Jensen Corporation, led by Eric Jensen, a noted international spokesperson for neuroscience and education.

Brenda will inspire and motivate you with her energy, enthusiasm and knowledge. Her wisdom, techniques, and brain based approach to education will inspire you and challenge you to meet the demands of this ever changing world.

## BIBLIOGRAPHY

## EXERCISE & THE BRAIN FOR PEAK PERFORMANCE

**Aamodt, Sandra.** *Welcome to Your Brain: Why You Lose Your Car Keys but Never Forgot how to Drive and Other Puzzles of Everyday Life.* Bloomsbury USA, 2008.

This book is clear, fascinating, educational, and entertaining. It is a brain manual. The writing is excellent and accessible to everyone, even those with minimal teaching about neuroscience and the brain.

**Brain Science Podcast #33.** Exercise and the Brain. March 21, 2008. brainscienpodcast.wordpress.com/2008/03/21/brain-science-podcast-33-exercise-and-the-brain/

A lively interview with professor of psychiatry at Harvard University, John Ratey.

Excellent.

**Gupta, Sanjay.** "Stuck on the Couch." Time. February 21, 2008.

Importance of exercise for life energy and wellness. Perfect reading.

**Howard, Pierce.** *The Owner's Manual for The Brain. Everyday Applications from Mind-Brain Research*. Bard Press, 2006.

A valuable resource for everyone. This should be the book you pull out every time you have a question about neuroscience or psychology. A guide book that contains the latest brain research.

**Medina, John.** Brain Rules: *12 Rules for Surviving and Thriving at Work, Home and School*. Pear Press, 2008.

Cutting edge research on 12 timely topics. This is my must read book of the year. Principle #1 deals with exercise and the brain.

**Ratey, John.** *A User's Guide to the Brain. Perception, Attention and the Four Theatres of the Brain*. Vintage Books, 2002.

A wonderful guide of scientific research sharing what we know about the brain and how to use this information. The emphasis is on how to use the brain to reach our maximum potential. Highly recommended.

**Ratey, John.** *SPARK. The Revolutionary New Science of Exercise and the Brain*. Little Brown and Company, 2008.

*SPARK* is filled with amazing case studies and the cutting edge research. This is really the first book to explore the connection between exercise and the brain. This book will change the way you look at exercise and has the potential to change your life. Everyone can benefit from this groundbreaking work. I couldn't wait for this book to come out, and I was not disappointed.