

SAN DIEGO COMMUNITY COLLEGE DISTRICT
COLLEGE OF CONTINUING EDUCATION
COURSE OUTLINE

SECTION 1

SUBJECT AREA AND COURSE NUMBER

HEAL 540

COURSE TITLE

BRAIN FITNESS

ALTERNATE TITLE(S):

BRAIN HEALTH
BRAIN FITNESS BASICS
BRAIN FITNESS TOPICS

TYPE COURSE

NON-FEE

OLDER ADULT

CATALOG COURSE DESCRIPTION

This course is designed to teach adults age 55 and older how to train and exercise the brain, make lifestyle choices to optimize brain health, strengthen and enhance cognitive function, and quell or reverse the effects of neurodegenerative decline. Students learn how to use scientifically designed cognitive exercises to strengthen and improve neurological processes. (FT)

LECTURE/LAB HOURS

225

ADVISORY

NONE

RECOMMENDED SKILL LEVEL

NONE

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCCE students demonstrate effective communication skills.
3. Critical Thinking
SDCCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
SDCCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

1. Gain an understanding of how to review and synthesize the most current information on aging and brain health.
2. Learn to implement activities that support brain health.
3. Learn to participate in hands-on brain training exercises and activities designed to improve brain health.
4. Gain knowledge on how to recognize the main causes of age-related cognitive decline.
5. Learn to identify and implement preventative, protective and antidotal measures for the maintenance of brain health.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

1. Name and define the most common causes of age-related cognitive decline.
2. Identify and discuss activities (virtual, cognitive, and/or physical) designed beneficial to brain health.
3. Define “negative learning” and describe its impact on the older adult brain.
4. Choose lifestyle changes that improve or reverse age-related decline.
5. Create a personal health plan for maintenance/improvement of brain health.

SECTION II

COURSE CONTENT AND SCOPE

1. Changes in the Aging Brain and Why They Occur
 - 1.1. The Brain 101
 - 1.2. Age-related cognitive decline
 - 1.3. Reduced schedules of activity (disuse)

COURSE CONTENT AND SCOPE (CONTINUED)

- 1.4. Noisy processing
- 1.5. Weakened neuromodulatory control/production
- 1.6. Negative learning
2. Neurological Concepts
 - 2.1. Neuroplasticity
 - 2.2. Neurogenesis
 - 2.3. Cognitive reserve
 - 2.4. Neuromodulators/transmitters
 - 2.5. Neuro-systems
3. Benefits of Brain Training
 - 3.1. Processing speed/fidelity
 - 3.2. Attention
 - 3.3. Mood/emotions
 - 3.4. Hearing
 - 3.5. Peripheral, and useful field of vision
 - 3.6. Memory
 - 3.7. Motor skills
 - 3.8. Knowledge acquisition and retention
 - 3.9. Physical health
 - 3.10. Activities of daily living
4. Conditions of Optimum Learning
 - 4.1. Attention
 - 4.2. Reward
 - 4.3. Novelty
 - 4.4. Meaningfulness
 - 4.5. Motivation
 - 4.6. Movement
5. Activities that Maintain/Improve Brain Health
 - 5.1. Physical
 - 5.1.1. Exercise
 - 5.1.2. Socialization
 - 5.1.3. Nutrition
 - 5.1.4. Travel
 - 5.1.5. Dance (strategic movement)
 - 5.2. Mental
 - 5.2.1. Mindfulness/meditation
 - 5.2.2. Dance (strategic calculation)

COURSE CONTENT AND SCOPE (CONTINUED)

- 5.2.3. Memorization
- 5.2.4. Lifelong learning (new skills and knowledge)
- 5.2.5. Stress reduction activities
- 5.3. Software applications
- 5.4. Self-identified brain fitness activities

APPROPRIATE READINGS

Reading assignments may include, but are not limited to, the following:

The instructor will provide the names of books, magazines, and websites that will facilitate learning and compliment curriculum. Workbooks, handouts and articles will be distributed in class. For example, students will find and read a current article that discusses the conditions of optimum learning.

WRITING ASSIGNMENTS

Writing and response assignments may include, but are not limited to, the following:

1. Creating a comprehensive health plan to include all the components of wellness and brain health.
2. Students may be encouraged to participate in online written discussion platforms via email, Learning Management Systems (e.g., Canvas, Padlet, etc.), assignment platforms, and/or online course workspace (e.g., Google Drive website).
3. Personal notebook or journal (hard copy or digital format)
4. Portfolio (e.g., for career or volunteer work, etc.)
5. Letter, blog, or other writings

OUTSIDE ASSIGNMENTS

Outside assignments may include handouts, book reviews, web-based material, videos, activities, discussions, field trips, and/or student interactions.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will engage in class activities and group assignments that will enhance their ability to make informed decisions in today's healthy aging processes. These activities may include, but are not limited, to the following:

BRAIN FITNESS

PAGE 5

1. Students describe how appropriate brain exercises strengthen brain architecture, improves brain function and increases brain processing speed.
2. Students choose a cognitive process and describe how it can be improved through brain exercises.
3. Students describe how brain training affects brain architecture and brain metabolism.
4. Students explain brain plasticity.

EVALUATION

Students will be evaluated through multiple measures of performance and will include:

Pre- and post-tests/surveys, journal writing, class discussions, written and/or oral examinations, quizzes, oral presentations, papers, and projects. The class will evaluate course content and applicability to everyday living skills through discussion and evaluation sheets. Standardized competency-based pre- and post-tests will be utilized as appropriate with some software packages and alternative teaching methods. The course also includes computer-generated assessments and progress reports.

METHODS OF INSTRUCTION

The primary methods of instruction may include, but are not limited to: lectures, digital presentations, computer software/programs, videos, supplementary readings, group discussions, on-line delivery, web-based reading assignments, student presentations, guest speakers, web-casts, virtual discussion groups, and field trips.

This course is designed with a focus on increasing equity and student success. Instructors adhere to the San Diego College of Continuing Education policies related to encouraging equity in courses in in-person and online learning modalities. Instructors implement the principles of student equity by understanding identity and implicit bias in the classroom. Create engaging home pages, course outlines, course content, learning strategies, transparent assignments and quizzes, which are designed and implemented with equity in mind. Instructors include accessibility options for students with disabilities or others who prefer alternate format materials. Instructors create an inclusive and empowering learning environment for all students, be it online or in-person.

This course, or sections of this course, may be offered through distance education.

TEXT AND SUPPLIES

Textbooks may include, but are not limited to:

The Brain That Changes Itself, Norman Doidge, Viking Adult, current edition

Younger Next Year, Chris Crowley & Henry S. Lodge, Workman Publishing, current edition

Super Brain, Deepak Chopra, M.D. & Rudolph E. Tanzi, Ph. D., Harmony Books, current edition

Brain Based Learning: the New Paradigm of Teaching, Eric P. Jensen, Crown Press, current edition

10 Costly Medicare Mistakes You Can't Afford to Make, Danielle Kunkle Roberts, Roselane Publishing, current edition

Soft-Wired, How the New Science of Brain Plasticity Can Change Your Life, Michael Merzenich, Ph.D., Parnassus Publishing, current edition

The Brain That Changes Itself, Norman Doidge, M.D., Viking Press, current edition

Your Brain at Work: Strategies for Overcoming Distraction, Regaining Focus, and Working Smarter All Day Long, David Rock, HarperCollins Publishers, current edition

Younger Next Year: Live Strong, Fit, and Sexy - Until You're 80 and Beyond, Chris Crowley and Henry S. Lodge, Workman Publishing Company, Inc., current edition

The Sharp Brains Guide to Brain Fitness: 18 Interviews with Scientists, Practical Advice, and Product Reviews, to Keep Your Brain Sharp, Alvaro Fernandez and Elkhonon Goldberg, Sharp Brains, Inc., current edition

Manuals: May vary according to instructor preference.

Software: Instructors may choose the use of Posit Science's BrainHQ or other known or unknown computer programs to supplement student learning.

Students will provide pen/pencil and a notebook.

PREPARED BY: Mary Burns; Debbie Emery-Flores DATE: April 6, 2022

REVISED BY: _____ DATE: _____

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the San Diego College of Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
San Diego College of Continuing Education Catalog