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**EMP 742: INTRODUCTION TO THE HUMAN BIOFIELD: SCIENTIFIC AND
PHILOSOPHICAL CONCEPTS (3 credits)**

Overview of Course:

Living systems are complex, nonlinear, dynamical, self-organizing systems of ionic, molecular, intracellular, cellular, and extracellular components, structures, patterns, and processes in continual interaction and transmutation through the mediating effects of energy fields imbued with information. The living system continually exchanges mass, momentum, and *energy-with-information* within and across multiple levels of organization to heal, maintain, or—in the case of humans—advance themselves. This course will provide a philosophical and scientific overview of holistic biotonic principles that are central to the organism, including the vital force or bioenergy field, also called the biofield. Such holistic field concepts have played central roles in the traditional worldviews and healing systems of all indigenous cultures on earth. Both Eastern and Western biofield concepts will be covered in this course. For example, various field concepts of interest to Western embryology and cognitive neurophysiology will be investigated. Eastern theories of the acupuncture system (including the meridians, acupuncture points, and dantians) and the chakra system will also be presented. Although such holistic field concepts generally have been frowned upon in conventional Western science and medicine for over a century, their resurrection may be essential to building an appropriate scientific foundation for energy medicine. The paradigmatic clashes with conventional science and medicine—as well as emerging opportunities for collaboration—will be explored. The course will conclude with a review of recent progress in biofield theory and experiment, an exploration of the possible relationship between biofields and consciousness, and an assessment of the promise of various potential directions of future research. The doctoral level course emphasizes a critical review of the literature, novel research questions, methodologies, and methods that will advance our understanding.

Course Topics: Nonlinear dynamical systems theory and living systems; history of the vital force and other subtle energy concepts in biology and medicine; the dantians and the acupuncture system of meridians and points; the chakra system; paradigms, paradigm clashes and revolutions in science and medicine; the biofield in theory and practice; biofield therapies; the role of consciousness, intent, and emotions with respect to the human biofield.

Learning Objectives: Students successfully completing this course will be able to address the following questions:

1. What are the Eastern and Western approaches to concepts of vital force, life energy, energy anatomy of the human body, and the mind-body? What is the relevant history and philosophy of the East and the West in this regard?
2. How do energy medicine modalities work (*modus operandi*) at the level of the biofield?
3. What are some concepts of the biofield in contemporary science, and how do they compare?
4. What key studies and/or phenomena demonstrate biofield phenomena?
5. What are some ways to measure or otherwise assess the biofield, including their advantages and limitations.
6. What is the role of consciousness (intent, emotion, belief, volition, etc.) in biofield phenomena, and what are some key studies that demonstrate the interrelationship between consciousness and the biofield?
7. What role do paradigms, paradigm clashes and revolutions play at the frontiers of science, as in biofield science?
8. What are the latest findings in biofield science? Perform a literature search for, summarize, and critically evaluate the recent research in this area.

9. What are some key research questions in biofield science that would help move this area forward, as well as strategies, methodologies, and specific methods for addressing these questions?

Audience:

Open to all students in the Masters programs.

COURSE DESCRIPTION (see Overview, above, for greater detail)

This course focuses on the scientific and philosophical basis for energy fields in life and in humans, from a Western scientific view with a holistic perspective via dynamical systems theory, electromagnetic field concepts, and biofield concepts and measurements. In addition, elements of an Eastern perspective including concepts of qi, prana, the life force, and other life energy concepts, as well as the energy anatomy and energy flow from the viewpoints of Chinese medicine and ancient Indian philosophy, will be addressed. Going beyond the masters level course, this doctoral level course focuses on performing updates on literature reviews, performing critical research reviews, formulating key questions for further research, and writing research proposals and/or conducting an original research project.

NEED STATEMENT

Students will:

- 1) Develop an understanding of the Eastern philosophical and Western science approaches to energy flow and fields in living systems and the human body in particular, and how these may be involved in various energy medicine modalities.
- 2) Understand, compare, and contrast the underlying assumptions, methods of study, ethics and values, history, philosophy, and politics that underlie Eastern approaches as well as Western (scientific) approaches to the biofield.
- 3) Develop critical thinking important to judging the soundness of claims in the literature and marketplace concerning products and various modalities of energy medicine.
- 4) Be able to assist clients in understanding how energy medicine modalities may work, evaluate claims, and how to research energy medicine modalities.
- 5) Be more prepared to research healer interventions and other energy medicine modalities in basic science and clinical studies.
- 6) Understand the role of paradigms and paradigm clashes at the frontiers of science.
- 7) Perform literature searches on recent research, critically review the research that has been done, and pose and address a new research question.

FACULTY-STUDENT COMMUNICATION

- Telephone Contacts

It is important that the students arrange by email beforehand for all telephone communications. Periodic telephone interaction, as required, at student's expense, can most easily be arranged through email contact.

- Communications

It is requested that students stay in weekly correspondence with the instructor using e-mail. The student should also set up monthly telephone conversations, at their expense, to discuss problems, concerns, or determine the direction of their course work. Students are always encouraged to contact the instructor by e-mail, fax, or telephone whenever a major concern may arise. It should be understood that as mature students, it is the responsibility of the students to stay in contact with their instructors. The instructor is also willing to set up one-on-one discussions with the student via audio & video Internet exchange using a variety of Net programs. Check your e-mail frequently for messages.

Students will normally send communications via email and submit papers as MSWORD format files attached to email messages. Students may also submit hard copies of their papers by mailing documents to the instructor directly at 6114 LaSalle Ave., PMB 605, Oakland, CA 94611 USA.

Synchronous internet sessions will be used for “chat sessions”. In this case, students are asked to download and use Skype (www.skype.com).

COURSE DELIVERY STYLE

Distance Education - Coursework is completed at a location determined by the student utilizing a computer that has the ability to play audio and video clips, with Microsoft Office Word, Excel, PowerPoint, Adobe Reader, along with a current web browser, internet connection and email address. Contact and communication with distance students is typically conducted by telephone, Internet, Skype, text chat, and email. Students are also encouraged to contact the University by facsimiles, and postal mail, and by personal visit to the University.

All lessons, coursework and papers must be copied to lessons@energymedicineuniversity.org from both the student and professor.

1) Reading Assignments

Students will read the course assignments and text materials as described in the section on Course Assignments.

2)Email Contact

Reflection on and questions about the lessons should be addressed via email weekly or as needed. There also may be a student/faculty discussion chat group, or Skype meeting, which creates a larger feedback mechanism through internet communication. Students are always encouraged to contact the instructor via email whenever a problem arises.

3) Course Paper/Project

Students will write a research paper consisting of a specific topic in depth in relation to the course subject matter. This will involve performing an up-to-date literature review on the latest findings on that topic and a critical and integrative review of the literature; posing a novel question for research along with stating the appropriate research strategy, methodology, methods, and type of data analyses for fully addressing the question. If possible, the student will actually conduct a pilot study addressing their question, and provide data and full analysis. The paper should be comparable to a professional research proposal or a completed paper aimed for publication in a peer-reviewed journal. A topic and detailed outline must be pre-approved by the instructor. [Note: Students located in the

San Francisco Bay Area may have the opportunity to work with the instructor at her Emeryville laboratory on a specific research project.]

4) Essay Examination

Students will have an oral examination of their comprehension of the reading materials and key topics of the course. Before the deadline, students must schedule with the instructor the time and date for the face-to-face, telephone, or Skype conference. During the examination, the instructor will make notations of the effectiveness, qualities, and weaknesses of the student's responses.

COURSE ASSIGNMENTS:

Read the following materials (see course bibliography at end of syllabus for full references):

Assignment #1: Ancient wisdom; Eastern perspectives of energy anatomy. Gerber (1988) *Vibrational Medicine* (book), pp. 119-202; 369-414.

Assignment #2: Western science---electromagnetic fields and life. Becker and Selden (1985) *The Body Electric* (book), pp 1-270; Bischof papers (1995; 2000)

Assignment #3: Biofield concepts. Rubik, B (2002) *The Biofield Hypothesis* (journal paper); Rein G (2004) *Bioinformation within the Biofield* (journal paper); Savva (ed.. 2006) *Life and Mind* (book), pp. 3-60.

Assignment #4: Biofield measurement. Rubik, B et al.(2005; 2006) (journal papers); Rubik B(2008) (chapter 20 in Freeman's Text on Alternative Medicine); McCraty et al (1998), *Electricity of touch* (paper); Korotkov et al.(2004) (journal paper).

Assignment #5: Role of consciousness, intent, and paradigms. Tiller, W (2007) *Psychoenergetic Science* (book), pp.1-110; Radin D et al (2004), *Effects of healing intent on cultured cells* (journal paper); Radin D (2004), *Event-related EEG correlations between isolated human subjects* (journal paper). Radin D (2004) *Presentiment studies* (journal paper).

Assignment #6: Final paper or project.

Prepare a scholarly paper of approximately 20 double-spaced typewritten pages, size 12 pitch font, with 1-inch margins. Papers will focus upon a specific topic in relation to the course. Please propose topic and paper outline to instructor for pre-approval. Grades will be given on content, use of source material, also grammar, spelling, and originality of subject matter, conceptualization, and approach. Students should use the American Psychological Association (APA) Style Manual. Students may also have the option of designing and/or conducting a research project in lieu of writing a paper.

Assignment #7: Essay Examination

The final examination will be oral conducted by telephone conference, Skype (or other means), and will cover comprehension of the reading assignments. Students will negotiate the timing of the examination.

INDIVIDUALIZATION OF STUDENT ASSIGNMENTS

Each paper or project will be chosen by the student to best support their individual professional goals, yet each student will also benefit from seeing the fruits of all fellow students' research and providing professional criticism of each others work.

Each student will be afforded the opportunity of writing on a subject that is related to his or her field of interest in relation to the course topic. This will assist the student in making each paper individualized. Also the student is encouraged to go outside the field and obtain research data from other interdisciplinary areas. Each student, based on his or her background, will be encouraged to transfer that theoretical information which the course provides into a practical format in the final paper or project.

COURSE GRADING

Grades are based on the following elements of a student's participation and accomplishment. In determining a grade for this course, the following formula will be used:

Reading required texts and on-line readings and commentaries – 20%
Course paper or project – 50%
Essay examination – 30%

Using this technique, there will be 100 points assigned to the course. Final semester grades will be calculated as follows:

92-100 points = A range
86-91 points = B range
80-85 points = C range
70-80 points = D range
Under 70 points = F

COURSE COMPLETION TIMETABLE

Weeks #1, 2, 3, Assignment 1
Weeks #4, 5, 6, Assignment 2
Weeks #7, 8, Assignment 3
Weeks #9, 10, Assignment 4
Weeks #11, 12, Assignment 5
Week #13, Integration of above material; dialogue
Weeks #14, 15, Assignment 6
Week #16, Assignment 7

SPECIAL NOTES AND INSTRUCTIONS

All coursework must be completed in a timely fashion. Students are encouraged to e-mail the instructor whenever they need advice, comments, or instruction. If possible, all students should email the instructors a short bio and photograph for their files.

COURSE BIBLIOGRAPHY: REQUIRED READING MATERIALS

Becker RO and Selden G. (1985). *The Body Electric: Electromagnetism and the Foundation of Life*. New York: Quill (William Morrow). (paperback book)

Bischof, M. (1995) Vitalistic and mechanistic concepts in the history of bioelectromagnetics. In: Belousov, L.V., and Popp, F.A. (eds.): *Biophotonics - Non-Equilibrium and Coherent Systems in Biophysics, Biology and Biotechnology*. Proceedings of the International Alexander G.Gurwitsch Conference, September 28-October 2, 1994 at the Faculty of Biology, M.V.Lomonosov Moscow State University, Moscow. Bioinform Services, Moscow, Russia, 1995, pp.3-14.
http://www.marcobischof.com/media/art/art_3d1c571e8aec4/VIT_MECH_MOSCOW.doc

Bischof, M. (2000) Field Concepts and the Emergence of a Holistic Biophysics. In: Belousov, L.V., Popp, F.A., Voeikov, V.L., and Van Wijk, R., (eds.): *Biophotonics and Coherent Systems*. Moscow University Press, Moscow 2000, pp.1-25.
http://www.marcobischof.com/media/art/art_3d141900af22a/Holistic%20Biophysics.doc

Gerber R (1988) *Vibrational Medicine*. Santa Fe, NM: Bear and Co. (paperback book)

Korotkov K., et al. (2004) Assessing biophysical energy transfer mechanisms in living systems: the basis of life processes. *Journal of Alternative and Complementary Medicine* 10(1):49-57. (PDF file available)

McCraty R., et al (1998). The electricity of touch: detection and measurement of cardiac energy exchange between people. Boulder Creek, CA: HeartMath Research Center, HeartMath Inst. (PDF file available)

Radin D, et al. (2004). Effects of healing intention on cultured cells and truly random events. *Journal of Alternative and Complementary Medicine* 10(1):103-112. (PDF file available)

Radin D (2004). Event-related EEG correlations between isolated human subjects. *Journal of Alternative and Complementary Medicine* 10(2):315-323. (PDF file available)

Radin D (2004). Electrodermal presentiment of future emotions. *Journal of Scientific Exploration* 18(2):253-273. (PDF file available)

Rein G (2004). Bioinformation within the biofield: beyond bioelectromagnetics. *Journal of Alternative and Complementary Medicine* 10(1): 59-68. (PDF file available)

Rubik, B. (2002). The Biofield Hypothesis: Its Biophysical Basis and Role in Medicine. *Journal of Alternative and Complementary Medicine*, December 2002, 8(6), 703-718. (PDF file available)

Rubik, B. and Brooks, Audrey (2005). Digital Electrophotographic Assessment of the Fingertips of Subjects Practicing Qigong. *Evidence-Based Integrative Medical Journal* 2005;2(4):245-252. (PDF file available)

Rubik, B; Brooks Audrey; and Schwartz, Gary (2006). *In Vitro* Effect of Reiki Treatment on Bacterial Cultures: Role of Experimental Context and Practitioner Wellbeing. *Journal of Alt. & Compl. Med* 2006;12(1):7-13. (PDF file available)

Rubik, B. (2008) Measurement of the Biofield. Chapter 20, In: Freeman L(ed.) (2008). *Mosby's Complementary & Alternative Medicine: A Research-Based Approach* (3rd ed.). St. Louis, MO: Mosby, pp. 555-573. (book, hardback only)

Savva S. (ed., 2006). *Life and Mind: In Search of the Physical Basis*. Victoria, B.C.: Trafford Publishing (www.trafford.com/06-2849) (paperback book)

Tiller WA (2007). *Psychoenergetic Science: A Second Copernican-Scale Revolution*. Walnut Creek, CA: Pavior Publishing. (paperback book)

ADDITIONAL RECOMMENDED SOURCES

Rubik, B. (1995) Energy Medicine and the Unifying Concept of Information. *Alternative Therapies in Health and Medicine*, March, vol. 1(1): pp. 34-39.

Rubik, B. (1997) The unifying concept of information in acupuncture and other energy medicine modalities. *Proceedings of the 1996 Medical Acupuncture Research Foundation Symposium on the Physiology of Acupuncture*. *Journal of Alternative and Complementary Medicine*, Vol. 3, Suppl. 1, pp. S-67 - S-76.

Rubik, B. (1999). The perennial challenge of anomalies at the frontiers of science. *Infinite Energy*, Vol. 5, Issue 26, pp. 34-41.

Rubik, B. (2002) Sympathetic Resonance Technology: Scientific Foundation and Summary of Biological and Clinical Studies. *Journal of Alternative and Complementary Medicine*, December 2002, 8(6), 823-856. (download from http://www.clarus.com/research_articles.htm)

Rubik, B. (2002) Scientific Analysis of the Human Aura. In: Heinze, R.I. (ed.) *Proceedings of the 19th International Conference on the Study of Shamanism and Alternative Modes of Healing*, Santa Sabina Center, Dominican University, San Raphael, CA, September 1-3, 2002. Berkeley, CA: Independent Scholars of Asia, Inc., 104-125.

Russo M. et al. (2001). Quantitative analysis of reproducible changes in high-voltage electrophotography. *Journal of Alternative and Complementary Medicine* 7(6): 617-627.

Schlebusch KP et al. (2005) Biophotons in the infrared spectral range reveal acupuncture meridian structure of body. *Journal of Alternative and Complementary Medicine* 11(1): 171-173.

Van Wijk EPA et al. (2008) Differential effects of relaxation techniques on ultraweak photon emission. *Journal of Alternative and Complementary Medicine* 14(3): 241-250.