

The Creative Brain

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Course Description

While brain structure and function can seem daunting, exploring this organ from the perspective of creativity will give you a non-threatening frame of reference to which you can relate. You will review your own experiences with creative expression and personal perspectives of creativity, including how creativity is demonstrated in your career field. You will examine basic brain anatomy and physiology. You will explore traditional and contemporary theories of creativity and of "mind" versus brain, as well as how creativity is perceived in society. As a final project, you will work in groups to explore one of several brain disorders historically considered related to creative expression.

Course Learning Goals

After completing this course, you will be able to:

- identify basic brain structures and their positions.
- explain in general terms what each structure does.
- explain which structures do not have a known function.
- explain how creativity is defined.
- describe how at least one brain disorder affects creative expression.
- describe how what they learned applies to their own experience with creative expression.

If you opt to address competence A-3-G you will be able to:

- *compare* historical, traditional and contemporary theories of creativity.
- *contrast* historical, traditional and contemporary theories of creativity.

If you opt to address competence A-5 you will be able to:

- define the concept of creativity.
- describe a product of creative expression in light of a historical, traditional or contemporary theories of creativity

If you opt to address competence H-3-X you will be able to:

- identify one or more ethnic or career cultures to which you belong and describe the cultural characteristics of each.
- describe how the selected culture interprets, encourages and discourages creative expression.

If you opt to address competence S-2-A you will be able to:

- *compare* historical, traditional and contemporary theories of mind versus brain, including our evolving understanding of brain structure, function and malfunction.
- *contrast* historical, traditional and contemporary theories of mind versus brain, including our evolving understanding of brain structure, function and malfunction.

Course Resources

To buy your books, go to <http://www.mbsdirect.net>.

Hint: type DePaul for name of the school.

[Click here for help buying your books](#)

Textbooks

Amabile, Teresa M. (1996). *Creativity in context*. Boulder, Colorado: Westview Press.

Amabile is a pre-eminent researcher in social aspects of creativity, but she also has extensive backgrounds in biology and education, which help boost the "readability" quotient of her books. For those of you accustomed to reading research reports, and presumably those who have already completed Research Seminar, you will appreciate the clarity with which she explains the studies to which she refers. This is an update to her classic, *Social Psychology of Creativity* (1983).

Greenfield, Susan A. (1997). *The human brain: a guided tour*. New York: Basic Books.

Susan Greenfield has earned widespread acclaim for her ability to make complex scientific information accessible to lay readers. She is an accomplished researcher and educator who has written several books about the human brain, any one of which could have served as a suitable text for this course.

Pinel, John P.J. (2007). *A colorful introduction to the anatomy of the human brain (2nd edition)*. Boston: Allyn & Bacon.

Pinel's "coloring books" are used extensively by professional, graduate and undergraduate students who need either a review or an introduction to the human body. From an instructional perspective, coloring is optional, although highly recommended; anything that reinforces information anchors that information more firmly in memory. Please read the preface for advice on how to best use the book and its numerous learning aides.

Required Readings

Brain Zone: Creativity. n.d. Retrieved February 1, 2004 from <http://www.knowl.demon.co.uk/page46.html>.

Churchland, Paul M. (1995). *The engine of reason, the seat of the soul*. Cambridge, MA: The MIT Press.

Cromie, William J. n.d. *Creativity tied to mental illness*. Retrieved on January 28, 2004 from

<http://www.news.harvard.edu/gazette/2003/10.23/01-creativity.html>.

Davis, Laurie. n.d. *Mental illness meets creativity in new journal of literary arts*. Retrieved on January 28, 2004 from <http://chronicle.uchicago.edu/020307/awakenings.shtml>.

Gosselink, Laura. n.d. *Creativity and mental illness*. Retrieved on January 28, 2004 from <http://serendip.brynmawr.edu/bb/neuro/neuro99/web2/Gosselink.html>.

Mojica Rey, Camille. n.d. *Researchers find link between creative genius and mental illness*. Retrieved on January 28, 2004 from http://news-service.stanford.edu/news/2002/june12/crazy_genius.html.

Schwab, Helmut. (1994). *Creative thought*. Retrieved on February 1, 2004 from <http://www.schwab-writings.com/bm/cth/index.html>.

Radiographic and Microscopic Images

#	Image	Web site	Retrieval date
1	Brain angiogram with right side blockage	http://www.nil.wustl.edu/~inr/procedurePhotos.html	12/18/07
2	Brain CT angiogram	http://www.urmc.rochester.edu/smd/Rad/diagneuro.htm#brainangio	1/31/04
3	Cerebral angiogram with right aneurysm	http://www.scielo.br/scielo.php?pid=S0004-282X2005000200028&script=sci_arttext	12/18/07
4	Labeled brain MRI	http://isc.temple.edu/neuroanatomy/lab/cormri22.jpg	1/30/04
5	Brain PET scan	http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=04-42	3/28/07
6	Noncontrast brain CT	http://www.medscape.com/content/2003/00/45/28/452834/452834_fig.html	1/31/04
7	PET brain activity	http://livefromcern.web.cern.ch/livefromcern/antimatter/everyday/everydaypictures/brain-read.gif	1/30/04
8	SPECT brain functions	http://www.youtube.com/watch?v=AEoVwFLerIE	1/31/04
9	Brain plain x-ray	http://www.sciencenewsforkids.org/articles/20070808/Note2.asp	1/31/04
10	Sagittal MRI of the corpus callosum	http://emedicine.medscape.com/article/407730-media	3/28/07

11	Corpus callosum and creativity	http://www.its.caltech.edu/~jbogen/text/creat6.htm	1/30/04
12	Electron micrograph of neural synapses (halfway down on page)	http://www.unmc.edu/Physiology/Mann/mann13.html	3/28/07
13	Neuron electron micrograph	http://www.sci.uidaho.edu/med532/neurons_neuroglial_cells_module1.htm	3/28/07
14	Neuronal electron micrograph (Slide #27)	http://www.coloradocollege.edu/idprog/Neuroscience/Cellular22-44.html	3/28/07

Course Competences

In this course, you will develop up to two of the following competences:

Competence	Competence Statement
A-3-G	Can assess the assumptions and implications of significant ideas about human experience.
A-5	Can define and analyze a creative process.
H-3-X	Can explain the effect of one's personal culture on creative expression.
S-2-A	Can describe, differentiate, and explain form, function, and variation within biological systems.

Relationship of this course to the competence statements

All of you will explore basic brain anatomy and physiology, as well as how the brain facilitates and affects creative expression. You will be exposed to basic tenets of the psychology of creativity. This content defines the course. You will all develop a "Creative Me" autobiography to examine your experiences with and assumptions about creative expression. You will work in groups to complete a final project that explores one of several brain disorders historically considered related to creative expression. **In addition:**

A-3-G: Can assess the assumptions and implications of significant ideas about human creativity.

1. Identifies significant traditions' ideas about the meaning of human creativity.
2. Identifies appropriate criteria to compare these ideas.
3. Applies these criteria to the assumptions and implications of creativity theories.

If you opt to address this competence, you will compare and contrast historical,

traditional and contemporary theories of creativity. You will post your findings to the Discussion Board and lead class discussion about your results. You will re-examine your "Creative Me" autobiography in light of what you learn and submit an addendum paragraph.

A-5: Can define and analyze a creative process.

1. Can define the concept of creativity.
2. Can identify, analyze, and describe the components of a creative process in a field of human endeavor.
3. Can explain how engaging in a creative process affects one's perception of the world.

If you opt to address this competence, you will select a creative output of interest, whether it be a book, painting, style of architecture, software innovation or other artifact. You will examine your objects in light of historical, traditional, or contemporary theories of creativity, and how the writer, artist, architect, developer or other creator fit within the theory or tradition. You will post your findings to the Discussion Board and lead class discussion about your results. You will re-examine your "Creative Me" autobiography in light of what you learn and submit an addendum paragraph.

H-3-X: Can explain the effect of one's personal culture on creative expression.

1. Identifies one or more ethnic or career cultures to which the student belongs and describes the cultural characteristics of each.
2. Describes how each group interprets, encourages and discourages creative expression.
3. Explains how the cultural characteristics affect the learner's perception and expression of creativeness.

If you opt to address this competence, you will investigate how either an ethnic culture or a career culture of specific interest to you interprets, encourages and/or discourages creative expression. You will post your findings to the Discussion Board and lead class discussion about your results. You will re-examine your "Creative Me" autobiography in light of what you learn and submit an addendum paragraph.

S-2-A: Can describe, differentiate, and explain form, function, and variation within biological systems.

1. Describes the nervous system in terms of brain structure and function.
2. Describes the healthy functioning of the brain.
3. Describes the unhealthy brain as it pertains to mind v. brain aspects of creativity.

If you opt to address this competence, you will compare and contrast historical, traditional and contemporary theories of mind versus brain, including a discussion of our evolving understanding of brain structure, function and malfunction. You will post your findings to the Discussion Board and lead class discussion about your results. You will re-examine your "Creative Me" autobiography in light of what you learn and submit an addendum paragraph.

Assessment Criteria for each Competence

- You will participate consistently and constructively by completing the activities listed below by their due dates:

- You will:
- identify basic brain structures and their positions, as evidenced by posted Pinel exercise answers.
- explain in general terms what each structure does, as evidenced by posted Pinel exercise answers and appropriate references in assignments.
- explain which structures do not have a known function, as evidenced by posted Pinel exercise answers and appropriate references in assignments.
- describe how creativity is defined, as evidenced through posted discussion and by appropriate references in assignments.
- describe how at least one brain disorder affects creative expression, as evidenced by completion of the final project according to guidelines provided.
- describe your personal experiences with and perspectives of creative expression, and how those perspectives are affected by what is learned through the course, as evidenced by completion of the creativity autobiography and its addendum, according to guidelines provided.

- If you opt to address competence A-3-G you will also:
- compare historical, traditional and contemporary theories of creativity, and
- contrast historical, traditional and contemporary theories of creativity, according to guidelines provided, as evidenced by posting of your assessment to the Discussion Board and leading class discussion of your assessment on the Discussion Board.
- discuss the application of other competences to the general course content, as evidenced by posting to competence-based, learner-led discussions.

- If you opt to address competence A-5 you will also:
- define the concept of creativity, and
- describe a product of creative expression in light of historical, traditional or contemporary theories of creativity, according to guidelines provided, as evidenced by posting of your assessment to the Discussion Board and leading class discussion about your assessment on the Discussion Board.
- discuss the application of other competences to the general course content, as evidenced by posting to competence-based, learner-led discussions.

- If you opt to address competence H-3-X you will also:
- identify one or more ethnic or career cultures to which you belong and describes the cultural characteristics of each, and
- describe how the selected culture interprets, encourages and discourages creative expression, according to guidelines provided, as evidenced by posting your assessment to the Discussion Board and leading class discussion about your assessment on the Discussion Board.
- discuss the application of other competences to the general course content, as evidenced by posting to competence-based, learner-led discussions.

- If you opt to address competence S-2-A you will also:
 - compare historical, traditional and contemporary theories of mind versus brain, including our evolving understanding of brain structure, function and malfunction, and
 - contrast historical, traditional and contemporary theories of mind versus brain, including our evolving understanding of brain structure, function and malfunction, according to guidelines provided, as evidenced by posting of your assessment to the (name) discussion and leading class discussion of your assessment.
 - discuss the application of other competences to the general course content, as evidenced by posting to competence-based, learner-led discussions.
- Your competence-specific tasks are posted on time and include all components described in the guidelines, and you actively lead discussion about your postings. Guidelines for leading the discussion are provided with the assignment, but all postings are evaluated as indicated in "Assessment Criteria for Online Discussion Participation" and all written assignments are evaluated as indicated in "Assessment Criteria for Online Discussion Participation."
 - You consistently, actively, and in a timely fashion participate in online discussions. You will receive feedback from the instructor as to whether your participation is appropriate, as per "Assessment Criteria for Online Discussion Participation." In any case, you have the opportunity to comment on the opinion of the instructor.
 - You submit your final projects by the due date. Note that a first submission and a revised submission are required for both papers and PowerPoint® presentations. The first submission is considered a draft that has been rewritten, reformatted and revised before it is handed in. It is not considered an initial draft, so must show attention to proper form. All written assignments are evaluated as indicated in "Assessment Criteria for Online Discussion Participation." PowerPoint® guidelines will be provided with the assignment.

Course Structure

This course consists of nine modules, with learning activities and assignments for each one. The first four modules address brain structure and function, the fifth module wraps up the brain and introduces creativity, and the remaining four modules focus on creativity.

To view the course schedule, click on the Schedule link on the left-hand navigation bar. This page contains the most recently updated listing of the topics and assignments due for each week of the course.

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Assessment

Assessment Criteria for Writing Assignments

- All writing assignments are to be submitted according to APA standards. Citation guides are available at http://www.lib.depaul.edu/eresource/infotype_subject_search.asp?MaterialID=8.

- It is strongly suggested that if you are using word processing software that you use spell- and grammar-check tools before submitting any draft or final project. In any case, proofreading is essential.
- The previous caution also applies to email and Discussion Board postings. While daily postings on the Discussion Board may be less formal than submitted assignments, under no circumstances should correct punctuation, correct spelling or the division of posted material into paragraphs be considered optional.

Assessment Criteria for Online Discussion Participation

- In online discussions, you will clearly and consistently link what you are learning in the course, including course readings, to your real life experiences. These discussions are a place for you to exchange reflections with others in the class.
- Specifically, in order to receive credit for participation in the online discussion parts of the course it is important that:
 1. you actively contribute to the online discussions in a collegial fashion, maintaining a respectful tone toward other participants, greeting others by name and closing with a signature.
 2. you demonstrate good "listening" skills and active inquiry skills in the online discussions. This means that you should pay attention, address the commentary of others with openness, and offer constructive and interested commentary, whether in the form of questions or statements.
 3. you contribute original ideas to the online discussion in ways that facilitates learning for other people, relating personal ideas to course ideas.
 4. you otherwise follow the "Online Participation Guidelines."

Percent distribution of assignments

Assignment	%
Autobiography	15
Discussion Board postings	20
Pinel composite score	15
Competence presentations	20
Peer evaluation	10
Final project	20

Course Grading Scale

A = 95 to 100	A- = 91 to 94	B+ = 88 to 90
B = 85 to 87	B- = 81 to 84	C+ = 77 to 80
C = 73 to 76	C- = 69 to 72	D+ = 65 to 68
D = 61 to 64	F = 60 or below	INC

Online Participation Guidelines

- Participation is essential, so please connect to the course at least every second day, preferably daily.
- Post responses to the discussion assignments in the first part of the week; in the second part of the week post comments to other class members.
- Discuss critically, give support to your peers, provide your own ideas and experiences, challenge the ideas of others or just make a comment that you read the posting.
- The role of the instructor is to make it easy for learners to interact, to promote significant discussion, to give feed back on postings and offer help where needed.
- This is not an independent study course, but a paced online group learning experience. This study guide indicates 6 to 11 hours per week of time is to be spent on this course of ten weeks.
- Please accept the challenge to work with others, to construct knowledge in negotiation with others. Working individually on the assignments and just posting them might not lead to significant knowledge and skills.

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Policies

Academic Integrity

DePaul University is a learning community that fosters the pursuit of knowledge and the transmission of ideas within a context that emphasizes a sense of responsibility for oneself, for others and for society at large. Violations of academic integrity, in any of their forms, are, therefore, detrimental to the values of DePaul, to the students' own development as responsible members of society, and to the pursuit of knowledge and the transmission of ideas. Violations include but are not limited to the following categories: cheating; plagiarism; fabrication; falsification or sabotage of research data; destruction or misuse of the university's academic resources; alteration or falsification of academic records; and academic misconduct. Conduct that is punishable under the Academic Integrity Policy could result in additional disciplinary actions by other university officials and possible civil or criminal prosecution. Please refer to your Student Handbook or visit <http://studentaffairs.depaul.edu/homehandbook.html> for further details.

Plagiarism: Plagiarism is a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:

- The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.
- Copying of any source in whole or part with only minor changes in wording or syntax, even with acknowledgement.
- Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.
- The paraphrasing of another's work or ideas without proper acknowledgement.

Plagiarism, like other forms of academic dishonesty, is always a serious matter. If a instructor finds that a student has plagiarized, the appropriate penalty is at the

instructor's discretion.

Disability Accommodations

Reasonable accommodations will be provided for students with disabilities on an individualized and flexible basis. The Office of Students with Disabilities (OSD) determines appropriate accommodations through consultation with the student. For certain learning disabilities and/or attention deficit disorders, the Productive Learning Strategies Program (PLuS) determines the appropriate accommodations. See the instructor for more information or call OSD at 773-325-7290 (phone) or 773-325-7296 (TTY); or call PLuS at 773-325-1677.

Incomplete Grades

The intent of the Incomplete grade is to allow students extra time to complete their final assignments. This need arises because, in the closing weeks of the course, they have an event of significant magnitude that adversely affects their ability to complete the course, e.g. serious illness, death in the family, overseas deployment, or natural disaster.

You must request an incomplete grade in writing two weeks before the end of the quarter. Incomplete grades will be considered only after you have satisfactorily completed at least 75 percent of the coursework, and you have such an unexpected, uncontrollable event that prevents you from completing your course. Do not assume that you will qualify for an incomplete. Students who are failing the course at the point where they request an incomplete will not receive one, nor will they be granted after the end of the quarter. Incomplete grades are given at the discretion of the instructor.

If you do receive permission from the instructor to take an incomplete in the course, you will be required to complete a contract with the instructor, specifying how you will finish the missing work within the next two quarters (excluding summer). Incompletes not finished by the end of the second quarter (excluding summer) will automatically become an F grade on your transcript.

Instructors may not change incomplete grades after the end of the grace period without the permission of a college-based Exceptions Committee.

NOTE: In the case of a student who has applied for graduation and who has been approved for an Incomplete in his or her final term, the incomplete must be resolved within the four week grace period before final degree certification.

Protection of Human Subjects

For more information see: <http://research.depaul.edu/>.

Demonstrating the acquisition of competences in this course can involve "interactions" —interviewing and or observing other people—discussing those interviews or observations with other class members and writing them up in one or more final report(s). As such, these activities qualify as "research" with "human subjects" and are subject to University and Federal guidelines. Because it takes place in the context of this course, your research is exempt from approval by the School for New Learning's Local Review Board only under the following conditions:

1. The information you collect is EXCLUSIVELY for the purpose of classroom discussion and will NOT be used after the term is over. If there is any possibility that you will EVER use it in further research or for publication, you must obtain

- approval from the Local Review Board before you begin.
2. You assess and ensure that no "harm"—physical, mental, or social—does or could result from either your interviews and/or observations or your discussion and/or reports.
 3. The privacy and confidentiality of those that you interview or observe must be protected. Unless you receive specific permission, in writing, from the person(s) you interview or observe, please change their names, and make sure that their identity cannot be readily ascertained from the information you provide.
 - a. If you want to use real names and relationships, they must sign an "informed consent" document. For information on creating an "informed consent document" see, for example, <http://www.research.umn.edu/consent>.

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Course Expectations

Time Management and Attendance

SNL's online courses are not self-paced and require a regular time commitment EACH week throughout the quarter.

You are required to log in to your course at least four times a week so that you can participate in the ongoing course discussions.

Online courses are no less time consuming than "face to face" courses. You will have to dedicate some time every day or at least every second day to your studies. A typical four credit hour "face to face" course at SNL involves three hours of classroom meeting per week, plus at least three to six hours of study and homework per week.

This course will require at least the same time commitment, but your learning activities will be spread out through the week. If you have any problems with your technology, or if you need to improve your reading or writing skills, it may take even longer.

The instructor should be notified if your life events do not allow you to participate in the course and the online discussions for more than one week. This is particularly important when there are group discussions or you are working as part of a team.

If you find yourself getting behind, please contact the instructor immediately.

Your Instructor's Role

Your instructor's role in this course is that of a discussion facilitator and learning advisor. It is not their responsibility to make sure you log in regularly and submit your assignments. As instructor, s/he will read all postings to the general discussion forums on a daily basis but may not choose to respond to each posting. You will receive feedback to assignments.

The instructor may choose to designate "office hours" when s/he will be online and available and will immediately respond to questions. Depending on the instructor, this response may be by e-mail, instant messenger or telephone. Otherwise, you will generally receive a response to emailed or posted queries within 48 hours.

Your Role as a Student

As an online student, you will be taking a proactive approach to your learning. As the course instructor's role is that of a learning guide, your role is that of the leader in your own learning.

You will be managing your own time so that you can complete the readings, activities and assignments for the course, and you will also be expected to take a more active role in peer learning.

Credits

This course was designed and produced by Jennifer K. Holtz, Ph.D. and staff of SNL Online at DePaul University.

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