

# Cover Sheet: Request 11485

## SPA4XXX Neuroplasticity and Rehabilitation

### Info

Process	Course New Ugrad/Pro
Status	Pending
Submitter	Vogle,Candice Raquel cvogle@ufl.edu
Created	2/15/2017 12:34:03 PM
Updated	4/12/2017 2:27:14 PM
Description of request	This course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	PHHP - Speech, Language, and Hearing Sciences 313306000	Altmann, Lori J		3/29/2017
Added SPA4XXX UCC1-Neuroplasticity.pdf					2/15/2017
Deleted SPA4XXX Nplas and Rehab Sp17.pdf					2/15/2017
College	Recycled	PHHP - College of Public Health and Health Professions	HANSON, STEPHANIE L.	In description provided above, please remove Creation of Elective Course and simply start with Introduces. The syllabus references face-to-face sessions (Under Instructional Methods) but the header indicates this course is totally on line. Please reconcile. Please clarify participation grade further. Are the chat participation points the same as the peer review points? Please consider adding BPH as a prerequisite group given our pre-public health track in the BHS program has been changed to a stand-alone degree and major. In prerequisites, change upper division to "enrolled in limited access BHS or BPH" (if you agree to add BPH). These will need to be changed on the summary sheet in addition to the syllabus.	3/29/2017
No document changes					

Step	Status	Group	User	Comment	Updated
Department	Approved	PHHP - Speech, Language, and Hearing Sciences 313306000	Altmann, Lori J		4/3/2017
Deleted SPA 4904 Nplas and Rehab.pdf					4/3/2017
College	Recycled	PHHP - College of Public Health and Health Professions	HANSON, STEPHANIE L.	Current description still has terminology upper division which is different than limited access. My understanding was the intent was to offer this to BHS students in the limited access program. Please modify language if this is your intention. Otherwise, please make a note that upper division is correct and return to me. Thanks	4/12/2017
No document changes					
Department	Approved	PHHP - Speech, Language, and Hearing Sciences 313306000	Altmann, Lori J	They will not be in the Upper Division of BHS degrees unless they have been accepted into one of the 2 majors. So the two different terminologies are synonymous.	4/12/2017
No document changes					
College	Recycled	PHHP - College of Public Health and Health Professions	Vogle, Candice Raquel	Per Dr. Altmann's request.	4/12/2017
No document changes					
Department	Approved	PHHP - Speech, Language, and Hearing Sciences 313306000	Altmann, Lori J	I changed the syllabus and the Submitted Form- Abridged version. LA	4/12/2017
Added SPA 4904 Nplas and Rehab Sp17-for Curriculum Committee.pdf					4/12/2017
College	Approved	PHHP - College of Public Health and Health Professions	HANSON, STEPHANIE L.		4/12/2017
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			4/12/2017
No document changes					

<b>Step</b>	<b>Status</b>	<b>Group</b>	<b>User</b>	<b>Comment</b>	<b>Updated</b>
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

# Course|New for request 11485

## Info

**Request:** SPA4XXX Neuroplasticity and Rehabilitation

**Description of request:** This course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

**Submitter:** Altmann,Lori J laltmann@ufl.edu

**Created:** 4/12/2017 11:17:13 AM

**Form version:** 2

## Responses

**Recommended Prefix**SPA

**Course Level** 4

**Number** XXX

**Category of Instruction** Advanced

**Lab Code** None

**Course Title**Neuroplasticity and Rehabilitation

**Transcript Title**Nplas and Rehab

**Degree Type**Baccalaureate

**Delivery Method(s)**Online

**Co-Listing**No

**Effective Term** Fall

**Effective Year**2017

**Rotating Topic?**No

**Repeatable Credit?**No

**Amount of Credit**3

**S/U Only?**No

**Contact Type** Regularly Scheduled

**Weekly Contact Hours** 3

**Course Description** This elective course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

**Prerequisites** Enrolled in a limited access BHS major, or permission of the instructor

**Co-requisites** None

**Rationale and Placement in Curriculum** BHS students are required to take a specific number of approved, upper-division college electives. However, there are few of these offered in the health sciences, and there are few available for distance-learning BHS students. This course is intended to fill that gap.

The course is highly interdisciplinary and focuses on the key principle underlying all behavioral interventions: Neuroplasticity. The course features guest lectures from professors with various treatment specialties, including: physical therapy, speech-language therapy, health psychology, and audiology. Assessments will focus first on understanding the neuroplasticity process and ways to harness plasticity to improve overall brain function, and then on analyzing the effects of different treatments using the the framework provided by Kleim and Jones' seminal

article, "Principles of Experience-Dependent Neural Plasticity: Implications for Rehabilitation after Brain Damage." Due to the highly interdisciplinary approach, the course is expected to be of interest to many BHS students, regardless of concentration.

**Course Objectives** After successfully completing SPA4904, students will be able to distinguish how life style choices impact neuroplasticity and how treatments and rehabilitation practices across the health sciences incorporate the principles of neuroplasticity to improve treatment outcomes. In doing so, they will be able to compare how known facilitators of neuroplasticity are operationalized in various rehabilitation contexts, noting the interactions between neuroplasticity, physical attributes, behavior, and environmental stimuli.

**Course Textbook(s) and/or Other Assigned Reading** Rasking, S.A. (Ed.), Neuroplasticity and Rehabilitation. Guilford Press. (available hardcover or ebook)

Doidge, N. The Brain that Changes Itself. Penguin Books (paperback)

**Weekly Schedule of Topics** Will vary depending on topic.

**Links and Policies**  
<https://evaluations.ufl.edu/results/>  
<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>  
<http://www.dso.ufl.edu/sccr/honorcodeslconductcode.php>  
<http://www.dso.ufl.edu/studenthandbooklstudentrights.php>  
<http://www.dso.ufl.edu>  
<http://www.counselinq.ufl.edu>  
<http://www.umatter.ufl.edu/>  
<https://shcc.ufl.edu/>  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

**Grading Scheme** Weekly Assignments will vary depending on the topic, but will focus on applying what has been discussed in lectures and readings to real world situations. Some will be public posts in the Discussion board, others will be peer reviews of Group presentations. Weekly assignments are not collaborative endeavors.

Group Presentations. The class will be divided into 6 groups. Each group will create a presentation around one of the chapters in the book The brain that Changes Itself. The presentation should include: information about the researcher and challenges that the researcher had to overcome; details about their discoveries; the implications of their discoveries for their field and for our understanding of neuroplasticity, in general.

Presentations should be recorded and will be posted online for review and discussion.

All group members are expected to contribute in substantive way to the presentation. Group members will anonymously assess the participation their fellow members.

Three examinations.

Homework Assignments (6 @ 40 pts.each:24% of grade)

Group Presentation (1 @ 100 pts. 10% of grade)

Tests (3 @ 200 pts. each: 60% of grade)

Participation ( 60 points: 6% of grade)

**Instructor(s)** Lori Altmann

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**SPA4904: Neuroplasticity and Rehabilitation (3)**  
Spring 2017  
Sections: 2B97, 2H01  
Delivery Format: Online  
E-Learning: CANVAS

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Instructor Name: Dr. Lori Altmann  
Office: HPNP 2142  
Phone Number: 237-6594  
Email Address: [laltmann@ufl.edu](mailto:laltmann@ufl.edu)  
Office Hours: Wednesday, 9-11 am. Or by appointment (in person or by Skype)  
**Preferred Course Communications: Canvas Email**

Teaching Assistants: Zoe Xu ([jcxu@ufl.edu](mailto:jcxu@ufl.edu))

Class Location: Web-based  
Class Time: Tuesday, 7-8 pm. <http://ufaud.adobeconnect.com/spa4904b/>

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**Prerequisites:**

Enrolled in a limited access BHS concentration or permission of the instructor.

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## **PURPOSE AND OUTCOME**

### **Course Overview**

This elective course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

### **Course Objectives and/or Goals**

After successfully completing SPA4904, students will be able to distinguish how life style choices impact neuroplasticity and how treatments and rehabilitation practices across the health sciences incorporate the principles of neuroplasticity to improve treatment outcomes. In doing so, they will be able to compare how known facilitators of neuroplasticity are operationalized in various rehabilitation contexts, noting the interactions between neuroplasticity, physical attributes, behavior, and environmental stimuli.

Learning Outcomes: Students will

- Characterize the neuroplastic changes at the neural and cortical level so that the concepts of synaptic pruning, cortical maps, Hebbian theory, neurogenesis, and activity-dependent plasticity are addressed. (Analysis)
- Assess the endogenous and exogenous modifiers of neuroplasticity (cognitive reserve, sleep, exercise, smoking, and diet) so that their impacts on treatment and rehabilitation are addressed. (Analysis)
- Distinguish the principles of neuroplasticity as they are incorporated into treatment plans developed and implemented by Audiologists, Clinical Neuropsychologists, Occupational Therapists, Physical Therapists, and Speech Pathologists. (Analysis)

## **Instructional Methods**

### **Web-Based Class–**

*What is expected of you?*

You are expected to actively engage in the course throughout the semester. You will have a **weekly assignment** over the material that will be due before the weekly online chats. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the online chats. If you are not prepared for class, you may struggle to keep pace with the activities occurring in the chat sessions, and it is unlikely that you will reach the higher learning goals of the course. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

## **Course Materials and Technology**

### **Required Books**

Rasking, S.A. (Ed.), **Neuroplaticity and Rehabilitation**. Guildford Press. (available hardcover or ebook)

[http://www.amazon.com/Neuroplasticity-Rehabilitation-Sarah-Raskin/dp/1609181379/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=undefined&sr=1-1&keywords=neuroplasticity+and+rehabilitation](http://www.amazon.com/Neuroplasticity-Rehabilitation-Sarah-Raskin/dp/1609181379/ref=sr_1_1?s=books&ie=UTF8&qid=undefined&sr=1-1&keywords=neuroplasticity+and+rehabilitation)

Doidge, N. **The Brain that Changes Itself**. Penguin Books (paperback)

**Plus: Articles as assigned.**

For technical support for this class, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
  - (352) 392-HELP - select option 2
  - <https://lss.at.ufl.edu/help.shtml>
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## ACADEMIC REQUIREMENTS AND GRADING

### Assignments

- Homework Assignments ( 6 @ 40 pts. each: 24% of grade)
- Group Presentation ( 1 @ 100 pts. 10% of grade)
- Tests ( 3 @ 180 pts. each: 54% of grade)
- Participation ( 120 points 12% of grade)
  - Within-group discussions 12@8 points each
  - Chat participation 24 points total

Point system used (i.e., how do course points translate into letter grades).

<b>Points earned</b>	930-1000	900-929	870-899	830-869	800-829	770-799	700-769	*	670-699	630-669	600-629	<600
<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

\*The Bachelor of Health Science Program does not use C- grades.

<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
<b>Grade Points</b>	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:

<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Homework Assignments will vary depending on the topic, but will focus on applying what has been discussed in lectures and readings to real world situations. Homework assignments are not collaborative endeavors.

Group Presentations. The class will be divided into 6-7 groups. Each group will create a presentation around one of the chapters in the book *The brain that Changes Itself*, or a chapter in Raskin. The presentation should include: information about the researcher and challenges that the researcher had to overcome; details about their discoveries; the implications of their discoveries for their field and for our understanding of neuroplasticity, in general. A Rubric for the presentation will be provided. Presentations should be recorded and will be posted online for peer review and discussion. All group members are expected to contribute in a substantive way to the presentation. Group members will anonymously assess the participation of their fellow members.

Assigned Discussions of issues in the readings or videos will take the place of in-class discussions and will count toward participation grades. Discussions will generally be held among the members of a group and will form the basis for weekly chats. Each person must submit one original post on the topic/question and make at least 1



comment on someone else's posts whose point of view differed from yours. Access to others' posts will not be granted until you have posted your own original comment. Each original post must be a minimum of 5 sentences long, and should be long enough to unambiguously make a point about the topic.

Peer reviews of two (of the 6) Group Presentations will also contribute to the participation grade. After viewing the recorded presentation that your group has been assigned, each person in the two reviewing groups must post a peer review of the presentation providing constructive feedback to the presenting group.

Chat Participation will be tracked via attendance at chats and responses to questions posed in chats.

### **Extra Credit (optional)**

To encourage awareness of different aspects of language research, you have the option of participating in 2 hours of research during the semester. A list of experiments that qualify for this credit can be found on the web at <http://slhs.php.ufl.edu/student-info/participant-pool-2/>

This site will be updated throughout the semester. Turn in a copy of the consent form given to you by the experimenter to the TAs. These must be turned in no later than the last day of class for the semester for you to receive credit, but may be turned in earlier. Participating in research will earn you an extra 2% (20 points) added to your course grade.

If you choose not to participate in research, do not qualify for any of the above studies, or are a distance learning student, you can receive the same amount of course credit for reading a research article and writing a 2.5 page synopsis of it. Choose any article from those posted in the Research Participation Alternatives folder on CANVAS for this purpose. This must be turned in no later than the last day of class for you to receive credit.

### **Exam Policy**

Assignments and assessments will be administered through CANVAS, and available for a limited time (e.g., 120 minutes for exams). The Honor Code applies to all graded work in this class! You are not to consult with anybody, unless the assignment requires it.

### **Policy Related to Make up Exams or Other Work**

If you are ill at the time of an exam, you must let Dr. Altmann know as soon as possible and **before the exam closes**, or you will not be allowed to take the quiz or exam at another time. All late assignments must be made up within one week of the due date.

Any requests for extended time, re-dos, or make-up quizzes or exams due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail the instructor as soon as possible (and no later than 12 hours) after the technical difficulty if you wish to request a make-up.

For group assignments, students will evaluate the effort of all the other people in the group. Students who do not participate fully in putting together the group presentations will receive a lower grade based on their peer evaluations. A student may opt out of the group presentations

in advance (at the beginning of the semester), but then must do the same assignment on their own.

Discussion posts containing inappropriate language, trolling, or other examples of poor “netiquette” will result minimally in the poster’s grade being docked 5-10 points, and deletion of the post. See paragraph on Netiquette, below.

### **Policy Related to Required Class Participation**

This is a web-based class. There will be a weekly 1 hour chat that you are encouraged to attend. The chat will be recorded for people who cannot attend the chat. It is possible that important material for tests will come up in chat that is not included in the recorded lectures, so viewing of the chats is highly recommended. Participation in weekly group and general discussions, and peer review activities will be tracked to determine your participation grade.

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### **Proper “netiquette”—courtesy & respect.**

When posting on the Discussion Board in your online class, you should:

- Make posts that are on topic and within the scope of the course material
- Take your posts seriously and review and edit your posts before sending
- Be as brief as possible while still making a thorough comment
- Always give proper credit when referencing or quoting another source
- Be sure to read all messages in a thread before replying
- Don’t repeat someone else’s post without adding something of your own to it
- Avoid short, generic replies such as, “I agree.” You should include why you agree or add to the previous point
- Always be respectful of others’ opinions even when they differ from your own
- When you disagree with someone, you should express your differing opinion in a respectful, non-critical way
- Do not make personal or insulting remarks
- Be open-minded

### **Feedback/Course Evaluation.**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> so make sure you include a statement regarding the value and expectation for student participation in course evaluations. We suggest you include a comment regarding how you will use the evaluations (e.g. to make specific improvements to the course and teaching style, assignments, etc.). It is also important to make some statement regarding the direct influence they have on faculty tenure and promotion, so your input is valuable. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

<https://evaluations.ufl.edu/results/>

## **Academic Integrity**

Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

- <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>
- <http://gradschool.ufl.edu/students/introduction.html>
- <http://www.dso.ufl.edu/sccr/honorcodes/conductcode.php>
- <http://www.dso.ufl.edu/studenthandbook/studentrights.php>

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## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health *optional in UF Template***

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:
- Alachua County Crisis Center:  
(352) 264-6789

<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

BUT – Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.



Your well-being is important to the University of Florida. The **U Matter, We Care** initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the **U Matter, We Care** Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The **U Matter, We Care** Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

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### **Public Safety and Emergency Services**

- University Police Department 392-1111 or 9-1-1 for emergencies.

**Other resources:**

- ❑ Campus Alcohol and Drug Resource Center (302 Student Health Center, 392-1161, ext. 4281).
  - ❑ Student Mental Health Services (245 Student Health Center, 392-1171).
  - ❑ University Counseling Center (301 Peabody Hall, 392-1575)
  - ❑ Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling
  - ❑ Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling
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**Proposed Schedule: Neuroplasticity and Rehabilitation SPA4 904 (college-approved elective)**

	TOPIC	READINGS	READINGS
Wk 1 1/10	Neuroplasticity Introduction	Welcome: Introductions Goals of Course Intro. To Neuroplasticity	Kleim and Jones- 10 principles of Neuroplasticity
Wk 2 1/17	Neuroplasticity at the neural level	a. The Neuron b. Neural learning. c. Discussion of reading	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 3: Experience Dependent Change in Non-human
Wk 3 1/24	Neuroplasticity & the brain	a. Brain review1 & 2 b. Motor cortex and the homunculus c. Merzenich	<b>Doidge</b> Chap. 3 Merzenich  1 <sup>st</sup> peer review due-Merzenich
Wk 4 1/31	Cognitive Reserve Exercise & Nplas	<i>Intro to Cognition</i> Chronic exercise Exercise and the Brain.	<i>Raskin. Chap 5 Cognitive Reserve</i>  Hillman, Erickson, Kramer (2008). Be smart exercise your heart.
Wk 5 2/7	Neuroplasticity and sleep	Sleep and Neuroplasticity Sleep, Insomnia, & treatments for sleep Review for test.	Walker Stickgold, "Sleep, Memory, Plasticity"
<b>Wk 6</b> <b>2/14</b>		<b>TEST 1</b>	
Wk 7 2/21	Stroke and stroke rehabilitation	What is a Stroke? Stroke Rehabilitation Compensatory vs. restorative treatments.	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 6: Practice related changes in Brain activity.

Wk 8 2/27	Neuroplasticity and walking; Pain	Treatment for gait disorders  The dark side of Plasticity: Pain	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 7: Activity based interventions for neurorehabilitation pages 117-144  <b>RED GROUP Doidge</b> , Chap. 5 Taub Learned non-use  <b>ORANGE GROUP</b> : Doidge Chap. 7 Ramachandran, Pain
Wk 9 3/14	Neuroplasticity & swallowing	Neuroplasticity and Swallowing  Hi-tech treatments for swallowing tDCS & rTMS	Johansson 2010 Current trends in stroke Rehab  <b>YELLOW GROUP</b> Doidge, Chap. 7-- Pasqual-Leone. Imagination-How thinking makes it so.
Week 10 3/21	Neuroplasticity and Psychiatry	PTSD	Makinson Young 2012 CBT and treatments for PTSD  Kolassa Ebert 2007 Structural & Functional Nplas in Traumatic Stress  <b>GREEN GROUP</b> Doidge, Chap. 6-Brain Lock Unlocked (OCD)  <b>BLUE GROUP</b> : Doidge, Chap. 9-Turning our ghosts into ancestors (Psychoanalysis)
WK 11 3/28		<b>Test 2</b>	
Wk 12 4/4	Cognitive deficits	Tailored cognitive interventions  Neuroplasticity and treating attention deficits	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 11: Plasticity of High Order Cognition: a Review 233-252  <b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 9: Neuroplasticity and rehabilitation of attention in

		in children	children. 172-198  <b>INDIGO GROUP:</b> Doidge, Chap.1. Neuroplasticity and Balance. Paul Bach Y Rita  <b>VIOLET GROUP:</b> Doidge. Chap. 2. The Woman who Changed her Brain.
Wk 13 4/11	Cochlear Implants, Language treatments in adults	Cochlear Implants and Neuroplasticity  Development of language in children with hearing loss  Neuroplasticity and language treatments	Dral Tillein, 2006 “Brain Plasticity under Cochlear Implant Stimulation”  <b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 10: Language therapy  <b>SILVER GROUP:</b> Raskin, Neuroplasticity and Rehabilitation, chap 6: Malleability and Plasticity in the neural systems for Reading and Dyslexia. p. 149-171.
Wk 14 4/18	Wrap-up and Overview	Disorders of Plasticity  What have we learned?	Chapter 13. What can rehabilitation Clinicians can do to facilitate Experience-Dependent Learning  Johnston, 2004. Clinical disorders of brain plasticity. (p. 73-80)
	Final	<b>Final Assessment (due during exam week)</b>	TBD

**Peer Review Schedule.**

Peer Reviews are due one week after the presentation is posted. Be sure to follow the rubric.

<u>Group</u>	<u>Will Review</u>
Red	Yellow, Indigo
Orange	Green, Violet
Yellow	Blue, Silver
Green	Red, Indigo
Blue	Orange, Violet
Indigo	Yellow, Silver
Violet	Red, Green



Silver

Orange, Blue

**Recommended SCNS Course Identification**

1. Prefix SPA      2. Level 4      3. Number XXX      4. Lab Code None

5. Course Title Neuroplasticity & Rehab  
6. Transcript Title (21 character maximum) Nplas and Rehab

7. Effective Term Fall      8. Effective Year 2017      9. Rotating Topic? No  
10. Amount of Credit 3      11. If variable, # minimum and # maximum credits per semester.  
12. Repeatable credit? No      13. If yes, total repeatable credit allowed #  
14. S/U Only? No      15. Contact Type Regularly Scheduled [base hr]  
16. Degree Type Baccalaureate      17. If other, please specify: Click here to enter text.  
18. Category of Instruction Advanced

**19. Course Description**

This elective course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

**20. Prerequisites**

Upper division standing in one of the BHS concentrations or permission of the instructor.

**21. Co-requisites**

N/A

**22. Rationale and Placement in Curriculum**

BHS students are required to take a specific number of approved, upper-division college electives. However, there are few of these offered in the health sciences, and there are vanishingly few available for distance-learning BHS students. This course is intended to fill that gap.  
The course is highly interdisciplinary and focuses on the key principle underlying all behavioral interventions: Neuroplasticity. The course features guest lectures from professors with various treatment specialties, including: physical therapy, speech-language therapy, health psychology, and audiology. Assessments will focus first on understanding the neuroplasticity process and ways to harness plasticity to improve overall brain function, and then on analyzing the effects of different treatments using the the framework provided by Kleim and Jones' seminal article, "Principles of Experience-Dependent Neural Plasticity: Implications for Rehabilitation after Brain Damage." Due to the highly interdisciplinary approach, the course is expected to be of interest to many BHS students, regardless of concentration.

23. Complete the syllabus checklist on the next page of this form.

### Syllabus Requirements Checklist

The University's complete Syllabus Policy can be found at:

[http://www.aa.ufl.edu/Data/Sites/18/media/policies/syllabi\\_policy.pdf](http://www.aa.ufl.edu/Data/Sites/18/media/policies/syllabi_policy.pdf)

The syllabus of the proposed course **must** include the following:

- Course title
- Instructor contact information (if applicable, TA information may be listed as TBA)
- Office hours during which students may meet with the instructor and TA (if applicable)
- Course objectives and/or goals
- A weekly course schedule of topics and assignments.
- Methods by which students will be evaluated and their grades determined
- Information on current UF grading policies for assigning grade points. This may be achieved by including a link to the appropriate undergraduate catalog web page:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.
- List of all required and recommended textbooks
- Materials and Supplies Fees, if any
- A statement related to class attendance, make-up exams and other work such as: *"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>."*
- A statement related to accommodations for students with disabilities such as: *"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."*
- A statement informing students of the online course evaluation process such as: *"Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>."*

It is **recommended** that the syllabus contain the following:

- Critical dates for exams or other work
- Class demeanor expected by the professor (e.g. tardiness, cell phone usage)
- The university's honesty policy regarding cheating, plagiarism, etc.

*Suggested wording: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.*

- Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**SPA4904: Neuroplasticity and Rehabilitation (3)**  
Spring 2017  
Delivery Format: Web  
E-Learning: CANVAS

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Instructor Name: Dr. Lori Altmann  
Office: HPNP 2142  
Phone Number: 237-6594  
Email Address: [laltmann@ufl.edu](mailto:laltmann@ufl.edu)  
Office Hours: Wednesday, 9-11 am. Or by appointment (in person or by Skype)  
**Preferred Course Communications: Canvas Email**

Teaching Assistants: Zoe Xu ([jcxu@ufl.edu](mailto:jcxu@ufl.edu))  
Brian Orr ([briangatorr@ufl.edu](mailto:briangatorr@ufl.edu))

Class Location: Web-based  
Class Time: Tuesday, 7-8 pm.

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**Prerequisites:**

Upper division standing in one of the BHS concentrations or permission of the instructor.

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## **PURPOSE AND OUTCOME**

### **Course Overview**

This elective course introduces the foundation knowledge about neuroplasticity and how it impacts treatment design and implementation across all of the health sciences. Students will be introduced to different types of rehabilitation approaches offered by the various health sciences.

### **Course Objectives and/or Goals**

After successfully completing SPA4904, students will be able to distinguish how life style choices impact neuroplasticity and how treatments and rehabilitation practices across the health sciences incorporate the principles of neuroplasticity to improve treatment outcomes. In doing so, they will be able to compare how known facilitators of neuroplasticity are operationalized in various rehabilitation contexts, noting the interactions between neuroplasticity, physical attributes, behavior, and environmental stimuli.

Learning Outcomes: Students will

- Characterize the neuroplastic changes at the neural and cortical level so that the concepts of synaptic pruning, cortical maps, Hebbian theory, neurogenesis, and activity-dependent plasticity are addressed. (Analysis)
- Assess the endogenous and exogenous modifiers of neuroplasticity (cognitive reserve, sleep, exercise, smoking, and diet) so that their impacts on treatment and rehabilitation are addressed. (Analysis)
- Distinguish the principles of neuroplasticity as they are incorporated into treatment plans developed and implemented by Audiologists, Clinical Neuropsychologists, Occupational Therapists, Physical Therapists, and Speech Pathologists. (Analysis)

## **Instructional Methods**

### **Web-Based Class–**

*What is expected of you?*

You are expected to actively engage in the course throughout the semester. You will have a **weekly assignment** over the material that will be due before the weekly chats. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the chat sessions, and it is unlikely that you will reach the higher learning goals of the course. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

## **Course Materials and Technology**

### **Required Books**

Rasking, S.A. (Ed.), **Neuroplasticity and Rehabilitation**. Guilford Press. (available hardcover or ebook)

[http://www.amazon.com/Neuroplasticity-Rehabilitation-Sarah-Raskin/dp/1609181379/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=undefined&sr=1-1&keywords=neuroplasticity+and+rehabilitation](http://www.amazon.com/Neuroplasticity-Rehabilitation-Sarah-Raskin/dp/1609181379/ref=sr_1_1?s=books&ie=UTF8&qid=undefined&sr=1-1&keywords=neuroplasticity+and+rehabilitation)

Doidge, N. **The Brain that Changes Itself**. Penguin Books (paperback)

**Plus: Articles as assigned.**

For technical support for this class, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
  - (352) 392-HELP - select option 2
  - <https://lss.at.ufl.edu/help.shtml>
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## ACADEMIC REQUIREMENTS AND GRADING

### Assignments

- Homework Assignments ( 6 @ 40 pts. each: 24% of grade)
- Group Presentation ( 1 @ 100 pts. 10% of grade)
- Tests ( 3 @ 200 pts. each: 60% of grade)
- Participation ( 60 points 6% of grade)

Point system used (i.e., how do course points translate into letter grades).

Points earned	930-1000	900-929	870-899	830-869	800-829	770-799	700-769	*	670-699	630-669	600-629	<600
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

\*The Bachelor of Health Science Program does not use C- grades.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:

<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Weekly Assignments will vary depending on the topic, but will focus on applying what has been discussed in lectures and readings to real world situations. Some will be public posts in the Discussion board, others will be peer reviews of Group presentations. Weekly assignments are not collaborative endeavors.

Group Presentations. The class will be divided into 6 groups. Each group will create a presentation around one of the chapters in the book *The brain that Changes Itself*. The presentation should include: information about the researcher and challenges that the researcher had to overcome; details about their discoveries; the implications of their discoveries for their field and for our understanding of neuroplasticity, in general. Presentations should be recorded and will be posted online for review and discussion. All group members are expected to contribute in substantive way to the presentation. Group members will anonymously assess the participation their fellow members.

### Extra Credit (optional)

To encourage awareness of different aspects of language research, you have the option of participating in 2 hours of research during the semester. A list of experiments that qualify for this credit can be found on the web at <http://slhs.php.ufl.edu/student-info/participant-pool-2/>

This site will be updated throughout the semester. Turn in a copy of the consent form given to you by the experimenter to the TAs. These must be turned in no later than the last day of class for the semester for you to receive credit, but may be turned in earlier. Participating in research will earn you an extra 2% (20 points) added to your course grade.

If you choose not to participate in research, do not qualify for any of the above studies, or are a distance learning student, you can receive the same amount of course credit for reading a research article and writing a 2.5 page synopsis of it. Choose any article from those posted in the Research Participation Alternatives folder on CANVAS for this purpose. This must be turned in no later than the last day of class for you to receive credit.

### **Exam Policy**

Assignments and assessments will be administered through CANVAS, and available for a limited time (e.g., 110 minutes for exams). The Honor Code applies to all graded work in this class! You are not to consult with anybody, unless the assignment requires it.

### **Policy Related to Make up Exams or Other Work**

If you are ill at the time of an exam, you must let Dr. Altmann know as soon as possible and **before the exam closes**, or you will not be allowed to take the quiz or exam at another time. All late assignments must be made up within one week of the due date.

Any requests for extended time, re-dos, or make-up quizzes or exams due to technical issues **MUST** be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You **MUST** e-mail the instructor as soon as possible (and no later than 12 hours) after the technical difficulty if you wish to request a make-up.

For group assignments, students will evaluate the effort of all the other people in the group. Students who do not participate fully in putting together the group presentations will receive a lower grade based on their peer evaluations. A student may opt out of the group presentations in advance (at the beginning of the semester), but then must do the same assignment on their own.

Discussion posts containing inappropriate language, trolling, or other examples of poor “netiquette” will result minimally in the poster’s grade being docked 5-10 points, and deletion of the post. See paragraph on Netiquette, below.

### **Policy Related to Required Class Attendance**

This is a web-based class. There will be a weekly 1 hour chat that you are encouraged to attend. The chat will be recorded for people who cannot attend the chat. It is possible that important material will come up in chat that is not included in the recorded lectures, so viewing of the chats is highly recommended.

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### **Proper “netiquette”—courtesy & respect.**

When posting on the Discussion Board in your online class, you should:

- Make posts that are on topic and within the scope of the course material



- Take your posts seriously and review and edit your posts before sending
- Be as brief as possible while still making a thorough comment
- Always give proper credit when referencing or quoting another source
- Be sure to read all messages in a thread before replying
- Don't repeat someone else's post without adding something of your own to it
- Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point
- Always be respectful of others' opinions even when they differ from your own
- When you disagree with someone, you should express your differing opinion in a respectful, non-critical way
- Do not make personal or insulting remarks
- Be open-minded

### **Feedback/Course Evaluation.**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> so make sure you include a statement regarding the value and expectation for student participation in course evaluations. We suggest you include a comment regarding how you will use the evaluations (e.g. to make specific improvements to the course and teaching style, assignments, etc.). It is also important to make some statement regarding the direct influence they have on faculty tenure and promotion, so your input is valuable. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

<https://evaluations.ufl.edu/results/>

### **Academic Integrity**

Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:



**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

- <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>
  - <http://gradschool.ufl.edu/students/introduction.html>
  - <http://www.dso.ufl.edu/sccr/honorcodes/conductcode.php>
  - <http://www.dso.ufl.edu/studenthandbook/studentrights.php>
- 

## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health *optional in UF Template***

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:

- Alachua County Crisis Center:  
(352) 264-6789

<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

BUT – Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.



Your well-being is important to the University of Florida. The **U Matter, We Care** initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the **U Matter, We Care** Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The **U Matter, We Care** Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

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### **Public Safety and Emergency Services**

- University Police Department 392-1111 or 9-1-1 for emergencies.

### **Other resources:**

- ❑ Campus Alcohol and Drug Resource Center (302 Student Health Center, 392-1161, ext. 4281).
  - ❑ Student Mental Health Services (245 Student Health Center, 392-1171).
  - ❑ University Counseling Center (301 Peabody Hall, 392-1575)
  - ❑ Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling
  - ❑ Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling
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**Proposed Schedule: Neuroplasticity and Rehabilitation SPA4 904 (college-approved elective)**

	TOPIC	READINGS	READINGS
Wk 1	Neuroplasticity Introduction	Welcome: Introductions Goals of Course Intro. To Neuroplasticity	Kleim and Jones-  10 principles of Neuroplasticity
Wk 2	Neuroplasticity at the neural level	a. The Neuron b. Neural learning. c. Discussion of reading	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 3: Experience Dependent Change in Non-human
Wk 3	Neuroplasticity & the brain	a. Brain review1 & 2 b. Motor cortex and the homunculus c. Merzenich	<b>Doidge</b> Chap. 3 Merzenich
Wk 4	Cognitive Reserve Exercise & Nplas	<i>Intro to Cognition</i> Chronic exercise Exercise and the Brain.	<i>Raskin. Chap 5 Cognitive Reserve</i>  Hillman, Erickson, Kramer (2008). Be smart exercise your heart.
Wk 5	Nplas and sleep	Sleep and Neuroplasticity, Parts 1-4pri	Walker Stickgold, "Sleep, Memory, Plasticity"  Treatment for sleep disorders
<b>Wk 6</b>		<b>TEST</b>	
Wk 7		What is a Stroke? Stroke Rehabilitation Compensatory vs. restorative treatments.	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 6: Practice related changes in Brain activity.
Wk 8	Neuroplasticity motor deficits, and pain	Treatment for gait disorders	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 7: Activity based interventions for neurorehabilitation 117-144

		The dark side of Plasticity: Pain	<b>GROUP Doidge</b> , Chap. 5 Taub Learned non-use
Wk9	Neuroplasticity & swallowing	Neuroplasticity and Swallowing  Hi-tech treatments for swallowing tDCS & rTMS	Johansson 2010 Current trends in stroke Rehab  <b>GROUP Doidge</b> -- TMS-Pasqual-Leone
Week 10	Neuroplasticity and Psychiatry	PTSD	Makinson Young 2012 CBT and tx for PTSD  Kolassa Ebert 2007 Structural & Functional Nplac in Traumatic Stress  <b>GROUP Doidge</b> -OCD chapter
<b>WK 11</b>		<b>Test</b>	
	Cognition	Intro to Cognition  Tailored cognitive interventions	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 11: Plasticity of High Order Cognition: a Review 233-252
Wk 12	Cognitive-linguistic deficits in children	Treatments for attention	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 9: Neuroplasticity and rehabilitation of attention in children. 172-198  <b>GROUP Doidge. Chap.2</b> The Woman who Changed her Brain.
Wk 13	Hearing & balance		Dral Tillein, 2006 "Brain Plasticity under Cochlear Implant Stimulation"  <b>GROUP Doidge</b> . Neuroplasticity and Balance. Paul Bach Y Rita--Assessment
Wk 14	Language - adults	Neuroplasticity and language treatments  CATE  V-Nest	<b>Raskin</b> , Neuroplasticity and Rehabilitation, chap 10: Language therapy  Raymer, 2008 Nplac and Aphasia Therapy

Wk15	Wrap-up and Overview	What have we learned?	Chapter 13. What can rehabilitation Clinicians can do to facilitate Experience-Dependent Learning  <b>GROUP</b> Raskin, Neuroplasticity and Rehabilitation, chap 6: Malleability and Plasticity in the neural systems for Reading and Dyslexia. p. 149-171.
		<b>Test 3</b>	