

Annual Assessment Report
The Study of the Mind / Neuroscience Program
May 31st, 2022
Dr. James M. Dow

The Program

The interdisciplinary Study of the Mind / Neuroscience program is completing its sixth year. The program incorporates required courses from the natural sciences, the social sciences, and the humanities. 2021-2022 is the second year we offered the Study of the Mind major and the neuroscience minor. We will not have any further Neuroscience Major declarations going forward in 2022-2023. In 2017, we had three graduates; in 2018, five graduates; in 2019, nine graduates; in 2020, six graduates; in 2021, eight graduates, and in 2022, 10 majors (two Study of the Mind and eight Neuroscience). We revised our learning goals in 2019-2020 to make them more assessable. In 2020, we revised our assessment plan and in 2020-2021 carried out assessment of the Study of the mind major focusing on learning goals 1 and 2 (See Appendix 1). Our assessment data showed that we are succeeding in meeting learning goals 1 and 2 in our program. In our conversations wrapping up 2021, we decided to focus on learning goals 3 and 4 for 2021-2022 assessment. In our assessment meeting, which occurred on May 4th in Ellis Hall but I used Teams to prove it occurred (please see attendance report). We discussed learning goals 3 and 4 for our 2021-2022 assessment. We continued to use a senior capstone rubric to assess seniors that enabled direct assessment of learning goals in the program, specifically learning goals 3 and 4, and used direct assessment of Learning goals 3 and 4 in our required courses.

The Capstone Course

The Capstone course was taught this year focusing on the interdisciplinary nature of the major. Dr. Carmen Merrick taught the course this year. The course continued to encourage students to do independent weekly research on interdisciplinary topics of their choosing. The students completed a course paper that was interdisciplinary in nature and integrated two disciplines of the students choosing. The capstone project was the final interdisciplinary course paper in the course. Similar to last year the students were assessed on foundational understanding in the disciplines and on interdisciplinary integration. Dr Merrick used the rubric that was tied to learning goals and used the revised senior survey to reflect the assessment of learning goals for the Study of the Mind. Given that the major is an interdisciplinary major, the assessment of the success of the major depends upon determining if students are integrating concepts, principles, and frameworks throughout and at the culmination of the major. Successful interdisciplinary work depends upon having disciplinary knowledge prior to integration.

Action Plan for Improvement

In our conversations in the assessment meeting on May 4th, we discussed our assessment of learning goals 3 and 4 in the last year. We also met on Monday November 29th, 2021 to prepare the department for assessment for the year. In the 2021-2022 year, we increased our use of direct assessment and indirect assessment of learning goals 3 and 4 focusing on using an assessment rubric in senior seminar but also included data from the required courses: PSYC 220 Brain and Behavior, CSCI 150 Foundations of Computer Science, PHIL 350 Philosophy of Science, PHIL 390 Philosophy of Mind, and BIOL 325 Neurobiology. The major import of our discussions about

learning goal 3 and 4 is that Drs. Campolo and Dow will discuss the different ways that PHIL 350 Philosophy of Science is meeting the learning goals of the MIND program. Below is the indirect assessment from the Senior Survey of LG3 and LG4. We will also have a meeting in the fall to discuss rethinking our curriculum mapping because our faculty have been changing and courses may need to be remapped into learning goals. However, we will continue with the original assessment plan and assess learning goals 5, 6, and 7 next year. Although we will need to revise some of the wording of the LGS 5-7 in our fall meeting.

LG3: Gain foundational knowledge from philosophy, psychology, biology, and computer science.	LG4: Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.
Strongly agree	Strongly agree
Agree	Strongly agree
Strongly agree	Strongly agree
Strongly agree	Agree
Strongly agree	Strongly agree

Summary of Assessment of Learning Goal 3

For Learning Goal 3 direct assessment, we looked at Senior Seminar and the required courses for the major. For Senior Seminar, we focused on how the students in senior seminar expressed foundational knowledge in their capstone paper. Here's the assessment of the seniors with respect to learning Goal 3.

Student 1	5
Student 2	5
Student 3	5
Student 4	3
Student 5	3
Student 6	5
Student 7	4
Student 8	3
Student 9	3
Student 10	4
1	Does not Meet Standards
2	Developing Achievement

3	Competent Achievement
4	Proficient Achievement
5	Mastery

For the required courses, we focused on one assignment that assessed the students' foundational knowledge.

In PSYC 220: Brain and Behavior, here's our assessment of LG3. LG3 was assessed by a total of 5 points distributed. Full assessment data attached in files.

Student	Exemplary	Competent	Needs Work
Student 11	3	1	1
Student 12	1	2	2
Student 10	2	2	1

In CSCI 150: Foundations of Computer Science, here's an assessment of LG3 for the final learning task.

Student	Exemplary	Competent	Needs Work	Unsatisfactory
Student 11	X			
Student 13	X			
Student 14			X	
Student 15		X		
Student 16		X		
Student 5			X	

For PHIL 350: Philosophy of Science, here's an assessment of LG3 for the course paper.

Student	Exemplary	Competent	Needs work	Unsatisfactory
Student 17		X		
Student 18		X		
Student 19		X		
Student 20	X			

For PHIL 390: Philosophy of Mind, here's an assessment of LG3 for the foundations of mind paper.

Student	Exemplary	Competent	Needs work	Unsatisfactory
Student 1	X			
Student 17		X		
Student 6	X			
Student 7			X	
Student 18		X		
Student 10		X		
Student 20		X		

For BIOL 325: Neurobiology, there's a comprehensive final exam which serves as the assessment of foundational knowledge in Neurobiology.

Student	Final Exam Grade
Student 1	99.0
Student 21	94.0
Student 2	96.0
Student 3	98.3
Student 4	94.7
Student 5	96.7
Student 6	97.0
Student 7	91.3
Student 8	95.0
Student 10	95.3

For indirect assessment of learning Goal 3, we asked students in the senior survey how they think they fared with respect to foundational knowledge in the disciplines. Of the 5 that responded here's the indirect assessment of learning goal 3.

Gain foundational knowledge from philosophy, psychology, biology, and computer science.
Strongly agree
Agree
Strongly agree
Strongly agree
Strongly agree

Summary of Assessment of Learning Goal 4

For Learning Goal 4 direct assessment, we looked at Senior Seminar and the required courses for the major. For Senior Seminar, we focused on how the students in senior seminar expressed integration of interdisciplinary knowledge in their capstone paper. Here's the assessment of the seniors with respect to learning Goal 4.

Student 1	4
Student 2	4
Student 3	5
Student 4	3
Student 5	3
Student 6	5
Student 7	3
Student 8	3
Student 9	4
Student 10	4
1	Does not Meet Standards
2	Developing Achievement
3	Competent Achievement
4	Proficient Achievement
5	Mastery

For indirect assessment of learning Goal 4, we asked students in the senior survey how they think they fared with respect to interdisciplinary integration. Of the 5 that responded here's the indirect assessment of learning goal 4.

LG4: Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.
Strongly agree
Strongly agree
Strongly agree
Agree
Strongly agree

We discussed whether we would want to integrate rubrics for the assessment of interdisciplinary integration into the courses other than Senior Seminar and decided against doing this given that Senior seminar serves this purpose.

Appendix 1

STUDY OF THE MIND / NEUROSCIENCE LEARNING GOALS

Upon completion of the requirements for the major in The Study of the Mind and the Minor in Neuroscience, students will:

1. Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.
2. Rigorously apply the scientific method to questions that arise from the study of the mind and brain.
3. Gain foundational knowledge from philosophy, psychology, biology, and computer science.
4. Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.
5. Demonstrate critical reading and thinking skills that allow students to assess and contextualize interdisciplinary literature in the study of the mind and neuroscience.
6. Demonstrate an understanding of the ethical issues in the field of study of the mind and neuroscience and the approaches researchers use to confront them.
7. Demonstrate competency in oral and written scientific communication skills.

Appendix 2

THE STUDY OF THE MIND / NEUROSCIENCE PROGRAM ASSESSMENT PLAN

The Study of the Mind Assessment Plan

Upon completion of the requirements for the major in The Study of the Mind and the Minor in Neuroscience, students will:

1. Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.
2. Rigorously apply the scientific method to questions that arise from the study of the mind and brain.
3. Gain foundational knowledge from philosophy, psychology, biology, and computer science.
4. Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.
5. Demonstrate critical reading and thinking skills that allow students to assess and contextualize interdisciplinary literature in the study of the mind and neuroscience.

6. Demonstrate an understanding of the ethical issues in the field of study of the mind and neuroscience and the approaches researchers use to confront them.
7. Demonstrate competency in oral and written scientific communication skills.

CURRICULUM MAPPING (See Also Appendix A)

NEUROSCIENCE MAJOR

Course	LG1	LG2	LG3	LG4	LG5	LG6	LG7
BIOL 150		I	I				I
CSCI 150	I		I				
PSYC 220	I	D	I (from biology and psychology, but not the others; although those disciplines are <i>introduced</i> , they are not substantial parts of the course)				
Statistics		D		I			
PHIL 350	D	I theoretical	D	I	M	I	M
PHIL 390	D	I theoretical	D	M	M	I	M
BIOL 325	M	D	D	D (mainly biology, chemistry, and physics)	D	I	D
NEUR 497				M		M	

4 electives	D	D	D	D	D	D	D
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NEUROSCIENCE MINOR

Course	LG1	LG2	LG3	LG4	LG5	LG6	LG7
BIOL 150		I	I				I
PSYC 220	I	D	I (from biology and psychology, but not the others; although those disciplines are <i>introduced</i> , they are not substantial parts of the course)				
BIOL 325	M	D	D	D	D	I	D
PHIL 390	D	I theoretical	D	M	M	I	M
2 electives	D	D	D	D	D	D	D

LEARNING GOAL 1

Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.

Direct Assessment— Rubric for assessment of major assignment— midterm, final, or course paper— that focuses on foundations from the following courses: PSYC 220 Brain and Behavior, CSCI 150 Foundations of Computer Science, PHIL 350 Philosophy of Mind, PHIL 390 Philosophy of Science, and BIOL 325 Neurobiology. Classroom teachers for each of these courses will identify 2 key questions that reflect the most important concepts that students should retain from the core courses. Each of these key questions should appear in an existing assessment instrument, such as a midterm, comprehensive final exam, or course paper. For each key question data will be collected on: 1) The text of the question; 2) The scoring rubric for the question; 3) The mean student score for the question.

and Capstone Thesis Rubric RLG1.

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.1.

LEARNING GOAL 2

Rigorously apply the scientific method to questions that arise from the study of the mind and brain.

Direct Assessment— Capstone Thesis Rubric R4 and R5 and Capstone Thesis Rubric RLG2

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.2.

Future assessment goals may include using a faculty-developed rubric for Statistics, Brain and Behavior, or Philosophy of Science to assess the use of the scientific method and specific techniques in select courses.

LEARNING GOAL 3

Gain foundational knowledge from philosophy, psychology, biology, and computer science

Direct Assessment— Capstone Thesis Rubric R3 and Capstone Thesis Rubric RLG3 and rubric for assessment of major assignment— midterm, final, or course paper— that focuses on foundations from the following courses: PSYC 220 Brain and Behavior, CSCI 150 Foundations of Computer Science, PHIL 350 Philosophy of Mind, PHIL 390 Philosophy of Science, and BIOL 325 Neurobiology. Classroom teachers for each of these courses will identify 2 key questions that the foundational knowledge gained from the core courses.

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.3.

LEARNING GOAL 4

Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.

Direct Assessment— Capstone Thesis Rubric R9 and RLG4 and Rubric from Interdisciplinary Senior Seminar paper

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.4.

Future assessment goals may include using faculty-developed rubrics for interdisciplinary components of core courses.

LEARNING GOAL 5

Demonstrate critical reading and thinking skills that allow students to assess and contextualize interdisciplinary literature in the study of the mind and neuroscience.

Direct Assessment— Capstone Thesis Rubric R1, R3, R6 and RLG5

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.5.

Future assessment goals may include rubrics for methods components or rubrics for literature reviews in core courses.

LEARNING GOAL 6

Demonstrate an understanding of the ethical issues in the field of study of the mind and neuroscience and the approaches researchers use to confront them.

Direct Assessment— Certificates of completion of either the human subjects or animal subjects training course offered by the NIH Office of Extramural and Intramural Research, respectively. These will be conducted as part of the capstone course.

- Human subjects course: <https://phrp.nihtraining.com/index.php>
 - o Topics: codes and regulations, respect for persons, beneficence and justice
- Animal subjects course: https://oacutrainng.od.nih.gov/public_menu.aspx
 - o Topics: animal care and use policies, occupational health and safety, animal health and well-being, animal care and use procedures

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.6.

LEARNING GOAL 7

Demonstrate competency in oral and written scientific communication skills.

Direct Assessment— Capstone Thesis Rubric R2, R7, and R8 and RLG7 and Rubric from science communication Senior Seminar paper

Indirect Assessment— The student perspective provided in the Neuroscience Senior Survey question 5.7.

Future assessments may include rubrics for oral presentations and course papers in core courses.

Appendix 3

The Study of the Mind Capstone Rubric
2021-2022

Student Name:

Faculty Evaluator Name:

Category	Basic	Competent	Exemplary	Score
R1: Thesis Statement & Title	<ul style="list-style-type: none"> •Topic is not identifiable, statement is vague, does not take a position, is too broad, or is not debatable. •Title does not identify or agree with the thesis statement. 	<ul style="list-style-type: none"> •Thesis statement is clearly identifiable, but may be too broad or does not take a position on the topic. 	<ul style="list-style-type: none"> •Thesis statement is clearly identifiable, debatable, specific, and takes a clear position on the topic. The title identifies the thesis statement. 	/5
R2: Abstract	<ul style="list-style-type: none"> •No abstract present or does not provide insight into thesis, argument or methodology •Significantly exceeds word limit. 	<ul style="list-style-type: none"> •Abstract present yet and provides basic overview of the topic. •Abstract missing one of the following: thesis (purpose), argument (context), or methodology (content). 	<ul style="list-style-type: none"> •Concisely answers the “what?” “why?” “how?” and “to what end?” •Describes context, purpose, and content. •Engages the reader. •<250 words. 	/10
R3: Introduction & Background	<ul style="list-style-type: none"> •The research question is not clearly articulated. •Does not connect to the “big picture.” •Too technical for lay reader to follow. 	<ul style="list-style-type: none"> •The research question is identified, but not supported by context or significance. •Ambiguous or brief understanding of 	<ul style="list-style-type: none"> •States the research question, and its context and significance. •Demonstrates complete, clear and accurate 	/10

	<ul style="list-style-type: none"> •Does not define critical terms. •Is incompletely and/or inaccurately referenced. 	<p>the “big picture” demonstrated.</p> <ul style="list-style-type: none"> •Most fundamental concepts and critical terms are described. •Mostly accurate and complete referencing. 	<p>understanding of the “big picture.”</p> <ul style="list-style-type: none"> •Includes well-organized description of basic knowledge necessary to follow content and arguments within the thesis. •Critical terms and abbreviations are defined. Completely and accurately referenced. 	
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R4: Analysis	<ul style="list-style-type: none"> •No synthesis or analysis of information presented. •Supporting information is noticeably one-sided. •Evidence is not presented to support major claims/arguments. 	<ul style="list-style-type: none"> •Some synthesis and analysis of information from multiple sources and perspectives is evident. •Evidence is presented to support major claims/arguments, but is not critically assessed. 	<ul style="list-style-type: none"> •Creatively synthesizes and compares/contrast s relevant information from multiple primary sources. •Critically and accurately assesses information presented. •Evidence/data from primary literature is used to support major claims/arguments. 	/1 0
R5: Argument & Reasoning	<ul style="list-style-type: none"> •Arguments are not supported by evidence/data. •Argument does not support the thesis statement and/or conclusions presented. •Argument contains false information. •The conclusion of the argument does not agree with the goal of the argument. 	<ul style="list-style-type: none"> •Most arguments are sensible and support the thesis statement, but do not completely convince the reader due to lack of evidence to support claims. 	<ul style="list-style-type: none"> •Major arguments presented are supported by evidence/data. •All arguments are accurate and support the thesis statement. •The conclusion of the argument is relevant to the goal of the argument. 	/1 0
R6: Summary & Conclusions	<ul style="list-style-type: none"> •Conclusions are unoriginal and/or are not supported by the arguments and evidence presented in the paper. •Limitations, significance, and feasibility of position presented not addressed. 	<ul style="list-style-type: none"> •Conclusions are not novel, yet provide additional insight on the topic based on a reasoned assessment of the information presented. •Feasibility of individual contribution and future directions not fully addressed. 	<ul style="list-style-type: none"> •Creates and defends a new position based on a reasoned assessment of the information presented. •Presents significance and limitations of conclusions. •Presents future directions that are salient, plausible and insightful. 	/1 0

R7: Writing Clarity & Organization	<ul style="list-style-type: none"> •Paper contains excessively long sentences or paragraphs, undefined obscure terms or concepts, confusing sentences, erratic paragraphs, and/or no headings/subheadings . •Few transitions used to aid information flow from one point to another. •Organization exhibits consequences of inadequate active planning for the clarity and organization of the presented material. 	<ul style="list-style-type: none"> •Most key concepts and terms are clearly defined. •Organization is somewhat choppy, but not erratic. •Most sections differentiated by headings/subheadings and connected by transitional statements. •Some active organizational planning is evident. 	<ul style="list-style-type: none"> •Carefully edited and proof-read. •Sentence and paragraph structure clear and well-organized. •Informative subheadings that aid comprehension and organization. •An organizational strategy illustrating evidence of active planning for presenting information clearly and effectively •Effective transitions to aid flow of information from one main point to another. •All key concepts and disciplinary language are clearly defined. 	/10
R8: Writing Mechanics & Grammar	<ul style="list-style-type: none"> •Paper does not meet specifications of required formatting. •Many grammar and spelling errors. •Paper does not meet the minimum required number of pages (25). •References not cited in correct format. 	<ul style="list-style-type: none"> •Most formatting requirements are met. •Only a few grammar or spelling mistakes observed. •Some references show inconsistencies in referencing style. 	<ul style="list-style-type: none"> •Double spaced, 12 pt font, 1 inch margins, page numbers. •Correct grammar and spelling. •Meets paper length requirements (>15 pp.) •References cited correctly in Chicago style (in-text and bibliography). 	/10
R9: Interdisciplinarity & Accessibility	<ul style="list-style-type: none"> •The argument is based on a single disciplinary perspective. Is only 	<ul style="list-style-type: none"> •A few different disciplinary perspectives are used to support the thesis. 	<ul style="list-style-type: none"> •The argument includes philosophical, psychological, biological, and 	/5

	accessible to disciplinary experts.	Is accessible to most readers.	computer scientific perspectives and is accessible to all readers	
R10: Originality & Creativity	<ul style="list-style-type: none"> •The topic, thesis, idea, or central argument is not original nor creative and is exactly the same as views discussed in sources. 	<ul style="list-style-type: none"> •A few ideas and arguments are original, but many are similar to views discussed in sources. 	<ul style="list-style-type: none"> •The topic, thesis, idea, or central argument is original and creative, and thus differs significantly from views discussed in sources. 	/5
R11: **1 st Reader Discretionary Points - Individual Growth/Work with Mentor	<ul style="list-style-type: none"> •Student did not advance any skills throughout writing and communication process •Did not work with mentor and/or did not keep appointments 	<ul style="list-style-type: none"> •Student showed some advancements in writing and communication during the thesis process •Incorporated mentor feedback but rarely engaged with mentor 	<ul style="list-style-type: none"> •Student exhibited tremendous growth in writing, professional, and/or communication skills •Worked closely with mentor, attended regular meetings, incorporated feedback 	/15
SubTotal				/100
*Late Penalty (10%/week)			-	%
Total				/100

* Thesis presentation will not be scheduled unless final paper has been submitted.

**1st Reader discretionary points are only to be scored by the primary thesis adviser, in consultation with the 2nd reader

Comments to Author:

Briefly identify the strengths of the thesis:

Briefly identify the weaknesses of the thesis:

RLGs: The below assessment serves the purpose of assessing the Study of the Mind / Neuroscience program learning goals and should not be factored into the capstone thesis grade. Please identify the extent to which you feel this thesis indicates that the student has achieved each of the following Study of the Mind / Neuroscience Learning Goals.

1 = Has not achieved and 5 = Achieved to a high degree, ND = I cannot determine from the information presented in the thesis.

Learning Goal	1	2	3	4	5	ND
RLG1: Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.						
RLG2: Rigorously apply the scientific method to questions that arise from the study of the mind and brain.						
RLG3: Gain foundational knowledge from philosophy, psychology, biology, and computer science						
RLG4: Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.						
RLG5: Demonstrate critical reading and thinking skills that allow students to assess and contextualize interdisciplinary literature in the study of the mind and neuroscience.						
RLG6: Demonstrate an understanding of the ethical issues in the field of study of the mind and neuroscience and the approaches researchers use to confront them.						
RLG7: Demonstrate competency in oral and written scientific communication skills.						

Appendix 4

Catalog Description for the Study of the Mind / Neuroscience Major and Minor

The Study of the Mind Major

12 courses distributed as follows:

BIOL 150 *Cell Biology*

CSCI 150 *Foundations of Computer Science*

PSYC 220 *Brain and Behavior*

PSYC 290 *Statistics*

or

MATH 215 *Statistical Analysis*
or
BUSI 250 *Principles of Statistics*
or
SOC1 210 *Social Statistics*
PHIL 350 *Philosophy of Science (W2)*
PHIL 390 *Philosophy of Mind (W2)*
BIOL 325 *Neurobiology*
NEUR 497 *Neuroscience Senior Capstone*

Four electives from the following list, no more than two of which can be from the same discipline as identified by its four-letter code and at least two of which at the 300 and above level:

BIOL/PSYC 300 *Comparative Animal Behavior*
BIOL 250 *Genetics*
BIOL 310 *Developmental Biology*
BIOL 320 *Animal Physiology*
BIOL 355 *Advanced Cell Biology*
BIOL 430 *Immunology*
BIOL 470 *Advanced Genetics*
CHEM 110 *General Chemistry I*
CSCI 151 *Data Structures and Object-Oriented Development*
CSCI 235 *Intelligent Robotics*
CSCI 270 *Computational Humanities*
CSCI 285 *Scientific Computing*
CSCI 335 *Artificial Intelligence*
PHIL 245 *Introduction to Logic*
PHIL 235 *Philosophy of Cognitive Science*
PHIL 280 *Free Will, Agents, and Intentions*
PHIL 420 *Neurophilosophy (W2)*
PSYC 295 *Research Methods (w/Lab)*
PSYC 310 *Social Neuroscience*
PSYC 320 *Cognitive Psychology*
PSYC 335 *Sensation and Perception*
PSYC 355 *Evolutionary Psychology*
PSYC 360 *Behavioral Neuroscience*

The Neuroscience Minor

Minor in Neuroscience

Students may not declare a Neuroscience minor if they have declared a major in the Study of the Mind.

6 courses distributed as follows:

BIOL 150 *Cell Biology (w/Lab)*
PSYC 220 *Brain and Behavior*

BIOL 325 *Neurobiology*
PHIL 390 *Philosophy of Mind (W2)*

Two electives from the following list from two different disciplines as identified by its four-letter code:

BIOL/PSYC 300 *Comparative Animal Behavior*
BIOL 320 *Animal Physiology*
PHIL 235 *Philosophy of Cognitive Science*
PHIL 350 *Philosophy of Science (W2)*
PHIL 420 *Neurophilosophy (W2)*
PSYC 310 *Social Neuroscience*
PSYC 335 *Sensation and Perception*
PSYC 360 *Behavioral Neuroscience*

Learning goals for Major and Minor

1. Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.
2. Rigorously apply the scientific method to questions that arise from the study of the mind and brain.
3. Gain foundational knowledge from philosophy, psychology, biology, and computer science.
4. Integrate the concepts, principles, and methods from multiple disciplines pertinent to the study of the mind.
5. Demonstrate critical reading and thinking skills that allow students to assess and contextualize interdisciplinary literature in the study of the mind and neuroscience.
6. Demonstrate an understanding of the ethical issues in the field of study of the mind and neuroscience and the approaches researchers use to confront them.
7. Demonstrate competency in oral and written scientific communication skills.

Project Mind Map: Visual & Oral Presentation Rubric

Number: 12; Major: Neuroscience; Class: Junior

	Exemplary	Competent	Needs Work
LG: 1,2,4,5	<p>The map reveals a <u>clear and sophisticated</u> understanding of at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses and shows a <u>basic</u> understanding of at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses too few learning goals OR the map addresses the goals but shows <u>limited</u> understanding:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary.
LG: 3	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies that directly and clearly relates to the behavior. <input type="checkbox"/> The IV, DV, and findings are clearly illustrated for both studies. <input type="checkbox"/> The studies are well-integrated into the map. <input type="checkbox"/> It is clear how the findings relate to the contents and focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies. <input type="checkbox"/> The IV, DV, and findings are evident for both studies. <input type="checkbox"/> The studies are related to the focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map fails to address one or more empirical studies. <input type="checkbox"/> Map addresses two empirical studies, but it is unclear how the studies relate to the behavior. <input type="checkbox"/> The IV, DV, and/or findings are unclear. <input type="checkbox"/> The studies connection to the contents and focus of the map is unclear. <input type="checkbox"/> Numbered references are non-existent, incorrect, or incomplete. Offers citations but only for empirical studies.
Oral Presentation	<p>Presenter, in their oral presentation, demonstrated a <u>clear and sophisticated</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>basic</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>limited</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. <input type="checkbox"/> Explain how neural signals are generated.

	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society.
CC: Communication	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter gestured and interacted with the physical map to make clear what material they were referencing. <input type="checkbox"/> Presenter kept to the time limit. <input type="checkbox"/> Presentation seemed planned and well-orchestrated. <input type="checkbox"/> The presentation was easy to follow. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter occasionally gestured and interacted with map to make clear what material they were referencing. <input type="checkbox"/> Went slightly over or under the time limit. <input type="checkbox"/> The presenter seemed prepared. <input type="checkbox"/> I could follow the presentation, although parts might have been unclear. 	<ul style="list-style-type: none"> <input type="checkbox"/> Speaking was generally too fast or slow or too loud or too soft. <input type="checkbox"/> Presenter made little eye contact. <input type="checkbox"/> Presenter read from notes. <input type="checkbox"/> It was unclear how the oral presentation related to the visual presentation. <input type="checkbox"/> Went dramatically over or under the time limit. <input type="checkbox"/> The presenter seemed to be winging it. <input type="checkbox"/> The presentation was difficult to follow.
CC: Professionalism	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter clearly communicated their competency in a wide range of concepts learned throughout the semester. <input type="checkbox"/> Presenter uses humor and examples in an appropriate way that relates to the content of the map. <input type="checkbox"/> Presenter, in their oral presentation, was sensitive the audience, taking care to use vocabulary and explanations that were clear and sensitive to diverse backgrounds and 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter communicated their competency in the concepts learned throughout the semester. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was not appropriately dressed, appeared disheveled. <input type="checkbox"/> Map appearance is disorganized and under-prepared; looks like it was thrown together at the last minute. <input type="checkbox"/> Oral presentation did not account for diversity in backgrounds; presenter may have made inappropriate jokes or off-hand comments that might appear insensitive to some individuals or groups of individuals. <input type="checkbox"/> Very little is communicated about what the presenter learned throughout the semester.

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Mind Map: Summary & Reflection Assignment & Rubric

	Exemplary	Competent	Basic
Writing	<ul style="list-style-type: none"> <input type="checkbox"/> Clearly and concisely written, with a good amount of detail and elaboration. <input type="checkbox"/> Writer avoids superfluous, redundant, or irrelevant information. <input type="checkbox"/> Free of proofreading and grammatical errors <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Mostly clear writing with a fair amount of detail. <input type="checkbox"/> Free of proofreading and grammatical errors. <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Writing is unclear and imprecise in places. <input type="checkbox"/> Some proofreading and grammatical errors. <input type="checkbox"/> Assignment is over the word limit or significantly under the word limit.
Summary	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly and concisely summarizes the contents of the map; tells a clear, and cohesive story of the behavior. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary is a nice complement to the map; the summary makes clear and relevant connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly summarizes the contents of the map. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary makes some connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary is unclear or superficial in places. <input type="checkbox"/> Summary fails to address a majority of the learning goals. <input type="checkbox"/> Summary makes some to no connections to the concepts and relationships illustrated in the map.
Reflection	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly and concisely answers two questions. <input type="checkbox"/> The writer uses examples and experiences to justify and explain answers. <input type="checkbox"/> Examples and experiences have clear connections to questions and answers and enhance the writer's answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly answers the three questions. <input type="checkbox"/> The writer uses some examples and experiences to elaborate on answers. <input type="checkbox"/> The examples and experiences are related to the questions and answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection answers the three questions, but some places are unclear. <input type="checkbox"/> The writing lacks specificity; shows a superficial reflection. <input type="checkbox"/> The writer uses few to no examples and experiences to justify and explain answers. <input type="checkbox"/> It is not clear how the examples and experiences relate to the questions or answers.

Project Mind Map: Visual & Oral Presentation Rubric

Number: 2; Major: Neuroscience; Class: Senior

	Exemplary	Competent	Needs Work
LG: 1,2,4,5	<p>The map reveals a <u>clear and sophisticated</u> understanding of at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses and shows a <u>basic</u> understanding at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses too few learning goals OR the map addresses the goals but shows <u>limited</u> understanding:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary.
LG: 3	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies that directly and clearly relates to the behavior. <input type="checkbox"/> The IV, DV, and findings are clearly illustrated for both studies. <input type="checkbox"/> The studies are well-integrated into the map. <input type="checkbox"/> It is clear how the findings relate to the contents and focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies. <input type="checkbox"/> The IV, DV, and findings are evident for both studies. <input type="checkbox"/> The studies are related to the focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map fails to address one or more empirical studies. <input type="checkbox"/> Map addresses two empirical studies, but it is unclear how the studies relate to the behavior. <input type="checkbox"/> The IV, DV, and/or findings are unclear. <input type="checkbox"/> The studies connection to the contents and focus of the map is unclear. <input type="checkbox"/> Numbered references are non-existent, incorrect, or incomplete. References not comprehensive (some information has no cited sources).
Oral Presentation	<p>Presenter, in their oral presentation, demonstrated a <u>clear and sophisticated</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>basic</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>limited</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. <input type="checkbox"/> Explain how neural signals are generated.

	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society.
CC: Communication	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter gestured and interacted with the physical map to make clear what material they were referencing. <input type="checkbox"/> Presenter kept to the time limit. <input type="checkbox"/> Presentation seemed planned and well-orchestrated. <input type="checkbox"/> The presentation was easy to follow. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. Sometimes fast. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter occasionally gestured and interacted with map to make clear what material they were referencing. <input type="checkbox"/> Went slightly over or under the time limit. <input type="checkbox"/> The presenter seemed prepared. <input type="checkbox"/> I could follow the presentation, although parts might have been unclear. 	<ul style="list-style-type: none"> <input type="checkbox"/> Speaking was generally too fast or slow or too loud or too soft. <input type="checkbox"/> Presenter made little eye contact. <input type="checkbox"/> Presenter read from notes. <input type="checkbox"/> It was unclear how the oral presentation related to the visual presentation. <input type="checkbox"/> Went dramatically over or under the time limit. <input type="checkbox"/> The presenter seemed to be winging it. <input type="checkbox"/> The presentation was difficult to follow.
CC: Professionalism	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter clearly communicated their competency in a wide range of concepts learned throughout the semester. <input type="checkbox"/> Presenter uses humor and examples in an appropriate way that relates to the content of the map. <input type="checkbox"/> Presenter, in their oral presentation, was sensitive the audience, taking care to use vocabulary and explanations that were clear and sensitive to diverse backgrounds and 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter communicated their competency in the concepts learned throughout the semester. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was not appropriately dressed, appeared disheveled. <input type="checkbox"/> Map appearance is disorganized and under-prepared; looks like it was thrown together at the last minute. <input type="checkbox"/> Oral presentation did not account for diversity in backgrounds; presenter may have made inappropriate jokes or off-hand comments that might appear insensitive to some individuals or groups of individuals. <input type="checkbox"/> Very little is communicated about what the presenter learned throughout the semester.

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Mind Map: Summary & Reflection Assignment & Rubric

	Exemplary	Competent	Basic
Writing	<ul style="list-style-type: none"> <input type="checkbox"/> Clearly and concisely written, with a good amount of detail and elaboration. <input type="checkbox"/> Writer avoids superfluous, redundant, or irrelevant information. <input type="checkbox"/> Free of proofreading and grammatical errors <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Mostly clear writing with a fair amount of detail. <input type="checkbox"/> Free of proofreading and grammatical errors. <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Writing is unclear and imprecise in places. <input type="checkbox"/> Some proofreading and grammatical errors. <input type="checkbox"/> Assignment is over the word limit or significantly under the word limit.
Summary	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly and concisely summarizes the contents of the map; tells a clear, and cohesive story of the behavior. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary is a nice complement to the map; the summary makes clear and relevant connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly summarizes the contents of the map. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary makes some connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary is unclear or <u>superficial</u> in places. <input type="checkbox"/> Summary fails to address a majority of the learning goals. <input type="checkbox"/> Summary makes some to no connections to the concepts and relationships illustrated in the map.
Reflection	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly and concisely answers two questions. <input type="checkbox"/> The writer uses examples and experiences to justify and explain answers. <input type="checkbox"/> Examples and experiences have clear connections to questions and answers and enhance the writer's answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly answers the three questions. <input type="checkbox"/> The writer uses some examples and experiences to elaborate on answers. <input type="checkbox"/> The examples and experiences are related to the questions and answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection answers the three questions, but some places are unclear. <input type="checkbox"/> The writing lacks specificity; shows a superficial reflection. <input type="checkbox"/> The writer uses few to no examples and experiences to justify and explain answers. <input type="checkbox"/> It is not clear how the examples and experiences relate to the questions or answers.

Project Mind Map: Visual & Oral Presentation Rubric

Number: 3: Major: Study of the Mind; Class: Junior

	Exemplary	Competent	Needs Work
LG: 1,2,4,5	<p>The map reveals a <u>clear and sophisticated</u> understanding of at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses and shows a <u>basic</u> understanding at least 3 of the 4 learning goals:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary. 	<p>The map addresses too few learning goals OR the map addresses the goals but shows <u>limited</u> understanding:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The evolutionary origins of the brain and behavior. <input type="checkbox"/> The basic elements of the nervous system, how the basic elements function to produce behavior, and how complex patterns of neural activity can produce complex behavior. <input type="checkbox"/> How genes and environment (including experience!) work together to shape the human brain and behavior; how behavior develops and changes over time. <input type="checkbox"/> That the study of the brain and behavior is interdisciplinary.
LG: 3	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies that directly and clearly relates to the behavior. <input type="checkbox"/> The IV, DV, and findings are clearly illustrated for both studies. <input type="checkbox"/> The studies are well-integrated into the map. <input type="checkbox"/> It is clear how the findings relate to the contents and focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map addresses at least two empirical studies. <input type="checkbox"/> The IV, DV, and findings are evident for both studies. <input type="checkbox"/> The studies are related to the focus of the map. <input type="checkbox"/> Map references all resources, including empirical and non-empirical resources, using numbers that correspond to a numbered reference list. 	<ul style="list-style-type: none"> <input type="checkbox"/> Map fails to address one or more empirical studies. <input type="checkbox"/> Map addresses two empirical studies, but it is unclear how the studies relate to the behavior. <input type="checkbox"/> The IV, DV, and/or findings are unclear. <input type="checkbox"/> The studies connection to the contents and focus of the map is unclear. <input type="checkbox"/> Numbered references are non-existent, incorrect, or incomplete.
Oral Presentation	<p>Presenter, in their oral presentation, demonstrated a <u>clear and sophisticated</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>basic</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. 	<p>Presenter, in their oral presentation, demonstrated a <u>limited</u> competency in their ability to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the basic elements of the nervous system. <input type="checkbox"/> Identify brain structures and describe their function. <input type="checkbox"/> Explain how neural signals are generated.

	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neural signals are generated. <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society. 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how neurons communicate with each other and the rest of the body. <input type="checkbox"/> Identify and describe how some basic neural systems function to produce behavior. <input type="checkbox"/> Identify and explain the basic elements of correlational and experimental research. <input type="checkbox"/> Explain how the brain structure and functioning can change with experience. <input type="checkbox"/> Identify ways that neuroscience research can help address real-world problems for individuals and society.
CC: Communication	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter gestured and interacted with the physical map to make clear what material they were referencing. <input type="checkbox"/> Presenter kept to the time limit. <input type="checkbox"/> Presentation seemed planned and well-orchestrated. <input type="checkbox"/> The presentation was easy to follow. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter spoke at an appropriate volume and pace. Sometimes slow. <input type="checkbox"/> Presenter made eye contact with the audience, and spoke in an engaging, elaborative way, without reading from notes. <input type="checkbox"/> Presenter occasionally gestured and interacted with map to make clear what material they were referencing. <input type="checkbox"/> Went slightly over or under the time limit. <input type="checkbox"/> The presenter seemed prepared. <input type="checkbox"/> I could follow the presentation, although parts might have been unclear. 	<ul style="list-style-type: none"> <input type="checkbox"/> Speaking was generally too fast or slow or too loud or too soft. <input type="checkbox"/> Presenter made little eye contact. <input type="checkbox"/> Presenter read from notes. <input type="checkbox"/> It was unclear how the oral presentation related to the visual presentation. <input type="checkbox"/> Went dramatically over or under the time limit. <input type="checkbox"/> The presenter seemed to be winging it. <input type="checkbox"/> The presentation was difficult to follow.
CC: Professionalism	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter clearly communicated their competency in a wide range of concepts learned throughout the semester. <input type="checkbox"/> Presenter uses humor and examples in an appropriate way that relates to the content of the map. <input type="checkbox"/> Presenter, in their oral presentation, was sensitive the audience, taking care to use vocabulary and explanations that were clear and sensitive to diverse backgrounds and 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was dressed appropriately for a professionalism presentation. <input type="checkbox"/> Map appears professionally organized and prepared. <input type="checkbox"/> Presenter communicated their competency in the concepts learned throughout the semester. 	<ul style="list-style-type: none"> <input type="checkbox"/> Presenter was not appropriately dressed, appeared disheveled. <input type="checkbox"/> Map appearance is disorganized and under-prepared; looks like it was thrown together at the last minute. <input type="checkbox"/> Oral presentation did not account for diversity in backgrounds; presenter may have made inappropriate jokes or off-hand comments that might appear insensitive to some individuals or groups of individuals. <input type="checkbox"/> Very little is communicated about what the presenter learned throughout the semester.

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Mind Map: Summary & Reflection Assignment & Rubric

	Exemplary	Competent	Basic
Writing	<ul style="list-style-type: none"> <input type="checkbox"/> Clearly and concisely written, with a good amount of detail and elaboration. <input type="checkbox"/> Writer avoids superfluous, redundant, or irrelevant information. <input type="checkbox"/> Free of proofreading and grammatical errors <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Mostly clear writing with a fair amount of detail. <input type="checkbox"/> Free of proofreading and grammatical errors. <input type="checkbox"/> Meets word limit. 	<ul style="list-style-type: none"> <input type="checkbox"/> Writing is unclear and imprecise in places. <input type="checkbox"/> Some proofreading and grammatical errors. <input type="checkbox"/> Assignment is over the word limit or significantly under the word limit.
Summary	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly and concisely summarizes the contents of the map; tells a clear, and cohesive story of the behavior. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary is a nice complement to the map; the summary makes clear and relevant connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary clearly summarizes the contents of the map. <input type="checkbox"/> The summary addresses most of the learning goals of the course. <input type="checkbox"/> The summary makes some connections to the content and relationships illustrated in the map. 	<ul style="list-style-type: none"> <input type="checkbox"/> Summary is unclear or <u>superficial</u> in places. <input type="checkbox"/> Summary fails to address a majority of the learning goals. <input type="checkbox"/> Summary makes some to no connections to the concepts and relationships illustrated in the map.
Reflection	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly and concisely answers two questions. <input type="checkbox"/> The writer uses examples and experiences to justify and explain answers. <input type="checkbox"/> Examples and experiences have clear connections to questions and answers and enhance the writer's answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection clearly answers the three questions. <input type="checkbox"/> The writer uses some examples and experiences to elaborate on answers. <input type="checkbox"/> The examples and experiences are related to the questions and answers. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reflection answers the three questions, but some places are unclear. <input type="checkbox"/> The writing lacks specificity; shows a superficial reflection. <input type="checkbox"/> The writer uses few to no examples and experiences to justify and explain answers. <input type="checkbox"/> It is not clear how the examples and experiences relate to the questions or answers.

	LG1: Understand, explain, predict, and model the relationships between the brain and nervous system, cognition, behavior, and the environment.	LG2: Rigorously apply the scientific method to questions that arise from the study of the mind and brain.	LG3: Gain foundational knowledge from philosophy, psychology, biology, and computer science.
Student 1	5	5	5
Student 2	5	4	5
Student 3	5	5	5
Student 4	3	5	3
Student 5	3	3	3
Student 6	5	5	5
Student 7	4	4	4
Student 8	3	3	3
Student 9	3	4	3
Student 10	4	4	4
		1	Does not Meet Standards
		2	Developing Achievement
		3	Competent Achievement
		4	Proficient Achievement
		5	Mastery

