

**University of Michigan - Department of Psychology**  
**Brain, Behavior, and Cognitive Science Concentration Worksheet**

Effective 9/2/08

The following are Departmental requirements for the concentration in Brian, Behavior and Cognitive Science

- Students may declare the BBCS concentration once they have passed an Introductory Psychology, Statistics, two Gateway courses and attend a Concentration Orientation.
- Some courses that are graded “credit/no credit” may be used to satisfy the categorical requirement for a laboratory course, but do not count toward the 24 credits needed to complete the BBCS concentration.
- BBCS concentrators are urged to consult with an advisor within the Department at least once per year to review their progress toward the concentration requirements.

<b>PREREQUISITES TO THE CONCENTRATION</b>	Term Completed	Grade	Credits	MHP
<p>Note: Credits from prerequisites do not count toward the 24 required concentration credits. Courses shown below where the credits column is shaded do not count towards this requirement.</p>				
<input type="checkbox"/> <b>Complete one Introductory Psychology Course:</b>				
111 (Introduction to Psychology)			4	
112 (Introduction to Psychology as a Natural Science)			4	
114 (Honors Introduction to Psychology)			4	
115 (Honors Introduction to Psychology as a Natural Science)			4	
<input type="checkbox"/> <b>Complete one Statistics Option:</b>				
<u>Option 1 (one course):</u>				
Stats 350 (Introduction to Statistics and Data Analysis)			4	
<u>Option 2 (two courses):</u>				
Stats 425 (Introduction to Probability) AND			3	
Stats 426 (Introduction to Theoretical Statistics)			3	
<input type="checkbox"/> <b>Complete three Gateway Courses:</b>				
<p>Note: One course from each of the following three gateway groups must be completed. Courses used to satisfy the gateway course requirement may not also be used toward the advanced course requirement.</p>				
<b>Biopsychology Gateway</b>				
230 (Introduction to Biopsychology) OR			4	
335 (Introduction to Animal Behavior)			4	
<b>Cognitive Psychology Gateway</b>				
240 (Introduction to Cognitive Psychology) OR			4	
345 (Introduction to Human Neuropsychology)			4	
<b>Social Science Gateway</b>				
250 (Introduction to Developmental Psychology)			4	
260 (Introduction to Organizational Psychology)			4	
270 (Introduction to Psychopathology)			4	
280 (Introduction to Social Psychology)			4	
290 (Introduction to Personality Psychology)			4	
<p>Note: A total of 3 Gateway courses, one from each Group, is required. Two of the Gateway courses count toward the prerequisite requirement, and one of the Gateway courses can be counted toward the 24 credits needed to complete the BBCS concentration. Please fill in your third Gateway course, that will count towards the concentration requirements, on the next page.</p>				

CONCENTRATION REQUIREMENTS		Term Completed	Grade	Credits	MHP
<input type="checkbox"/> <b>Gateway Requirement:</b>					
Write in the 3rd Gateway Course, listed on the previous page, used to fulfill your concentration requirements.					
COURSE # and NAME:				4	
<input type="checkbox"/> <b>BBCS Lab Requirement</b>					
The lab requirement must be met in one of the following three ways for a minimum of 5 credits. Each course must be taken for at least 2 credits in a single term. Please note that at least one course must be within the Psychology Department (only one Bio-based lab may be used).					
<ul style="list-style-type: none"> <li>■ Option 1: One course from A (Methods Based Labs) AND one course from B (Research Based Labs)</li> <li>■ Option 2: Two courses from A (Methods Based Labs)</li> <li>■ Option 3: One course from A (Methods Based Labs) AND two courses from either the Senior Thesis or Honors Research Sequence (Research Based Labs). Students must apply and be accepted into either the BBCS Senior Thesis or Honors Program for this option.</li> </ul>					
<b>A – Methods Based Labs</b>					
231 (Brain, Learning, and Memory)				4	
303 (Research Methods in Psychology)				3	
331/332 (Research Methods in Brain, Behavior, and Cognitive Science), both courses must be taken concurrently				4	
341 (Advanced Laboratory in Cognitive Psychology)				4	
342 (Laboratory in Judgment and Decision Making)				3	
Biology 226 (Animal Physiology Laboratory)				2	
EEB 381 (General Ecology)				5 - 6	
EEB 493 (Laboratory in Animal Behavior)				3	
MCDB 306 (Introductory Genetics Laboratory)				3	
MCDB 308 (Developmental Biology Laboratory)				3	
MCDB 423 (Introduction to Research in Cellular and Molecular Neurobiology)				3	
<b>B – Research Based Labs</b>					
322 (Field Practicum in Research Techniques/Natural Science)*				C/NC	
326 (Faculty Directed Early Research for Psychology as a Natural Science)				1 - 4	
422 (Faculty Directed Advanced Research/Natural Science)				1 - 6	
428 (Senior Thesis: Research in Psychology as a Natural Science-requires 2 semesters)				3	
<i>Honors Research Sequence</i>					
424 (Senior Honors Research I/Natural Science) AND				2 - 4	
426 (Senior Honors Research II/Natural Science)				2 - 4	
Note: Experiential based labs that are non-graded (graded Credit/No Credit) may fulfill the categorical requirement for this lab, however, the credits do not count toward the 24 concentration credits. If credit amounts are listed next to the course, the credits may be applied to the 24 concentration credits.					
<input type="checkbox"/> <b>BBCS Cognate Requirement</b>					
One course from this pre-approved list is required.					
Anthrobio 467 (Human Behavioral Ecology)				3 - 4	
Anthrobio 568 (Primate Behavioral Ecology and Sociobiology)				3	
Biolchem 415 (Introduction to Biochemistry)				3	
Biology 208 (Embryology)				3	
Biology 222 (From Message to Mind: An Introduction to Neurobiology)				3	
Biology 225 (Principles of Animal Physiology: Lecture)				3	
Biology 305 (Genetics)				4	
Biology 310 or 311 (Intro to Biochemistry) or Chem 351 (Fundamentals of Biochemistry)				4	
Biology 390 (Evolution)				4 - 5	
EEB 381 (General Ecology)				5 - 6	
EEB 440/Environ 442/NRE 442 (Biology of Fishes)				3	
EEB 442 (Biology of Insects)				5	
EEB 450 (Biology of Amphibians and Reptiles)				5	
EEB 451/Environ 451/NRE 451 (Biology of Mammals)				4	

<b>CONCENTRATION REQUIREMENTS</b>		Term Completed	Grade	Credits	MHP	
<b>BBCS Cognate Requirement, Cont.</b>						
EEB 481 (Population Dynamics and Ecology)				4		
EEB 492 (Behavioral Ecology)				4 - 5		
EECS 281 (Data Structures and Algorithms)				4		
EECS 492 (Introduction to Artificial Intelligence)				4		
Ling 315 (Introduction to Syntax)				2 - 3		
Ling 514 (Semantics and Pragmatics)				3		
MCDB 307 (Developmental Biology)				3		
MCDB 418 (Endocrinology)				3		
MCDB 422 (Cellular and Molecular Neurobiology)				3		
Phil 345 (Language and Mind)				2 - 3		
Phil 450 (Philosophy of Cognition)				3		
Phil 482 (Philosophy of Mind)				2 - 3		
Stats 401 (Applied Statistical Methods II)				4		
Stats 406 (Introduction to Statistical Computing)				4		
<input type="checkbox"/> <b>BBCS Advanced Course Requirement</b>						
Four courses from this pre-approved list for a minimum of 12 credits are required. Psych 230, 335, 240, or 345 may be used only if they are not also used toward the core requirement above.						
230 (Introduction to Biopsychology)				4		
240 (Introduction to Cognitive Psychology)				4		
335 (Introduction to Animal Behavior)				4		
338 (Primate Social Behavior I)				4		
344 (Second Language Acquisition)				3		
345 (Introduction to Neuropsychology)				4		
346 (Learning and Memory)				3		
347 (Perception)				3		
348 (Psychology of Thinking)				3		
349 (Talking Minds)				3		
400 (Special Problems in Psychology as a Natural Science)				3 - 4		
420 (Faculty Directed Advanced Tutorial Reading - Natural Science)				3 - 6		
432 (Reproductive Behavior in Mammals)				3		
433 (Biopsychology of Motivation)				3		
434 (Biopsychology of Learning and Memory)				3		
435 (Biological Rhythms and Behavior)				3		
436 (Drugs of Abuse, Brain, and Behavior)				3		
437 (Current Topics in Biopsychology)				3		
438 (Hormones and Behavior)				3		
439 (Behavioral Biology of Women)				4		
445 (Psychology of Language)				3		
446 (Human Factors Psychology)				3		
447 (Current Topics in Cognition and Perception)				3		
448 (Mathematical Psychology)				3		
449 (Decision Processes)				3		
530 (Advanced Topics in Comparative and Evolutionary Psychology)				3		
531 (Advanced Topics in Biopsychology)				3		
532 (Mammalian Reproductive Endocrinology)				4		
533 (Sleep: Neurobiology, Medicine, & Society)				3		
541 (Advanced Topics in Cognition and Perception)				3		
<input type="checkbox"/> <b>Psychology GPA Requirement</b>						
A student must earn a cumulative grade point average (GPA) of at least 2.0 in all courses taken within the Psychology Department. This includes any course taken in the Department such as pre-requisites, required courses, electives, and cognates (courses taken outside of psychology, but used toward the concentration or pre-requisites, for example, Stats 350). Transfer courses are not calculated into the GPA unless the grade appears on the official UM transcript.						
<b>CALCULATING YOUR GPA</b>				<b>Credits</b>	<b>MHP</b>	<b>GPA</b>
Divide the total number of Michigan Semester Hours (MSH), i.e. number of credits, earned in psychology courses, and courses taken outside of the department that are used to fulfill any Psychology requirement, into the total number of Michigan Honor Points (MHP) earned from those courses. Total MHP / Total MSH = GPA						

## BBCS CONCENTRATION QUICK FACTS

► The following credits do not count toward the 24 concentration credits you need:

- Introduction to Psychology
- Two of the three required Gateway Courses
- 100-level courses
- 200-level elective courses (with the exception of Psych 202 or 203)
- Pass/Fail or Credit/No Credit courses or labs

► The core courses consist of one Biopsychology and one Cognitive Psychology course. Notice that all four of these courses are listed under Advanced Courses as well. The courses you do not use toward the core requirement may be elected to count toward the advanced courses. You can only use each course once, either toward the core requirement or the advanced course requirement.

► Credits from your Statistics course(s) do not count toward the 24. We recommend that you take Stats early in your coursework since it is a pre-requisite for methods-based labs and several of the gateway (Core) courses.

► For your labs:

- One must be a Methods Lab. This can be in Psychology or Biology
- Your 2<sup>nd</sup> lab may be Research-Based

Note: Your two lab courses combined must total at least 5 credits and must be taken for at least 2 credits each. Only one Biology-based lab may count toward the BBCS concentration. Credit/No Credit experiential labs will fulfill the categorical requirement for a second lab, but the credits will not count toward the 34 concentration credits. They do count toward the LSA 120

► **Advanced Elective Credits** must be graded Psychology courses from the pre-approved list. You will need to take at least 4 courses for a minimum of 12 credits.

► **Get involved in Research!** If you are planning on attending any type of graduate program, especially within the field of Psychology, you will need research experience. You can do this for research-based lab credit. Please see the Student Academic Affairs Office for more information.

► **Transfer courses** may be applied toward your concentration, but at least 24 of your total 40 credits (includes pre-requisite and concentration credits) must be taken through the Psychology Department in Ann Arbor. Of those 24 in-house credits, at least 12 must be in upper level courses (300+, graded) in Psychology.

► **Registration Tip:** If courses are closed:

- Contact instructor
- Watch Wolverine Access for openings and/or waitlists
- Attend first day of class

► **Calculating BBCS Grade Point Average:** GPA=MHP/MSH – Include all Psych department courses and any cognates or courses from other departments counting toward your concentration (e.g., Stats 350). This includes the Intro Psych, any first year seminars, extra breadth courses, psychology courses that have been repeated or failed, and any other graded psychology courses. \*You must have an overall concentration GPA of at least 2.0 in order to graduate!

► **Middle Digit Trick:** The middle digit of Psychology Department undergraduate courses indicates the area of Psych with which the course is associated:

- 0, 1, 2=General
- 3=Biopsychology
- 4=Cognitive
- 5=Developmental
- 6=Organizational
- 7=Clinical
- 8=Social
- 9=Personality

**See an advisor at least once a year to review your progress!**