

BS in Psychological Sciences

Degree Program Description

The study of Psychology aims to understand the mind, behavior, and mental health. The Bachelor of Science in Psychological Sciences (BS) degree is for students interested in a more science-oriented curriculum to better prepare them for further study in science-oriented psychology graduate programs (e.g., neuroscience, quantitative psychology), or medical school (e.g., Doctor of Medicine/MD, psychiatry), or other health-related graduate programs (e.g., pharmacy, physical therapy). The required science track is not noted on the BS diploma or transcripts, but students can indicate the science track on resumes and/or graduate school application forms. Regardless of a student's ultimate goals, our faculty members believe that students will be best served by completing a rigorous research-oriented program of study. Therefore, students should expect their instructors to take a scientific approach to the particular psychological content of each course. While most psychology majors plan to find employment upon graduation with the undergraduate psychology degree, some psychology majors plan to pursue further study in psychology-related graduate or professional programs. Psychological Sciences majors work in diverse fields such as community and social services, human resources, management and business, health care, student affairs and services, law enforcement, education, and scientific research.

Major Program Requirements

In addition to University (<https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/>), general education (<https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/>), and College of Arts and Science (<https://catalog.missouri.edu/collegeofartsandscience/#undergraduatetext>) requirements, students must also meet the following major program requirements. All major requirements in the College of Arts and Science must be completed with grades of C- or higher unless otherwise indicated. Students are reminded to check the Undergraduate Catalog for course descriptions and prerequisite information.

Major Core Requirements

- The psychology major requires 30 credit hours in psychology coursework.
- All courses that count toward the psychology major requirements must be completed with a grade of C- or better. Grades of D+ or below or U will not be accepted. This includes the statistics requirement(s) and the required science track. The statistics requirement is fulfilled by taking either (a) STAT 1200 and STAT 2200 or (b) STAT 2500, or (c) STAT 1400 and STAT 2200.
- Students must complete MATH 1100 or MATH 1160 and the equivalent of STAT 2500 -- either by completing STAT 1200 and STAT 2200, or by completing STAT 2500.
- Students must complete STAT 1200 or STAT 2500 before or during the same semester as PSYCH 3010.
- Students must complete PSYCH 3010 before PSYCH 3020. PSYCH 3020 is a prerequisite for the Psych Capstone Lab course. PSYCH 3020 may be taken concurrently with PSYCH 4976HW or PSYCH 4976W. PSYCH 3020 must be completed before PSYCH 4977HW or PSYCH 4977W. We make no other exceptions to the research methods sequence requirements.

- Students must complete at least 6 credit hours in psychology courses numbered 4000 or above. The Psychology Capstone Lab may be used to meet this requirement.
- Students must complete at least one psychology course numbered 3000 or above that is designated Writing Intensive (WI). A WI Psychology Capstone Lab can meet this requirement.
- Students may use no more than 12 hours of Special Problems Courses, Special Readings Courses, or Internship Courses (PSYCH 2950, PSYCH 4940, PSYCH 4950, & PSYCH 4960) toward graduation. Within the 12 hours, no more than 9 hours may be Special Problems Courses (i.e., psychology research credit hours). A student may complete either 6 hours of PSYCH 2950 and 3 hours of PSYCH 4950, or they may complete 3 hours of PSYCH 2950 and 6 hours of PSYCH 4950.
- Psych majors may have up to a total of 6 hours of PSYCH 4940. Internships are not required for the psychology major.
- Other than the 12 hour limit of Special Problems Courses, Special Readings Courses, and Internship hours described above, there is no limit to the number of psychology credits that may count toward the required 120 credits to graduate with the Bachelor of Science.

Required Courses

PSYCH 1000 or PSYCH 1000H	General Psychology General Psychology - Honors	3
MATH 1100 or MATH 1160	College Algebra Precalculus Mathematics	3
STAT 2500 or STAT 1200 & STAT 2200 or STAT 1400 & STAT 2200	Introduction to Probability and Statistics I Introductory Statistical Reasoning and Introductory Statistical Methods Elementary Statistics for Life Sciences and Introductory Statistical Methods	3-4

Research Methods Sequence

PSYCH 3010 or PSYCH 3010H	Research Methods in Psychology Research Methods in Psychology - Honors	3
PSYCH 3020 or PSYCH 3020H	Applied Statistical Methods in Psychology Applied Statistical Methods in Psychology - Honors	3

Capstone course (psychology lab course)

PSYCH 4010W	Topics in Psychology Capstone - Writing Intensive	3
PSYCH 4971W	Developmental Psychology Capstone - Writing Intensive	3
PSYCH 4972W	Animal Learning Capstone - Writing Intensive	3
PSYCH 4973W	Human Cognition Capstone - Writing Intensive	3
PSYCH 4975W	Social/Personality Capstone - Writing Intensive	3
PSYCH 4977W	Independent Research Capstone II - Writing Intensive	3
PSYCH 4977HW	Honors Research Capstone II - Honors/ Writing Intensive	3
PSYCH 4978W	Clinical Psychology Capstone - Writing Intensive	3
PSYCH 4980W	Human Relationships Capstone - Writing Intensive	3
PSYCH 4987W	Cross-Cultural Psychology Capstone - Writing Intensive	3

PSYCH 4991W	The Science of Mindfulness Capstone - Writing Intensive	3
PSYCH 4992W	Applied Cognitive Psychology Capstone	3

Distribution Areas

Psychology majors are required to complete 12 hours in distribution courses, numbered 2000 or above. Six hours are required in each of 2 distribution areas. This ensures students will have exposure to a wide range of psychological theory and research. In addition, students choose two required additional Psychology courses (6 credit hours) to receive further education according to their interests. Although the distribution areas are presented below as distinct areas of study, a great deal of overlap exists among them. Students should understand the ways in which the various areas complement one another and gain the ability to integrate information learned in different areas.

Clinical/Social/Developmental Distribution

This distribution area studies the nature and causes of individuals' thoughts, feelings and behavior in social situations. It analyzes the cultural and biological influences on age-related changes in cognition, emotion, and social behavior that take place throughout an individual's lifespan. It focuses on scientific study of the causes of mental disorders as well as methods for assessing and alleviating mental health problems. It also is concerned with the study of mental health and wellness, including strategies for preventing the development of mental disorders. Courses in this distribution area include:

PSYCH 2310	Social Psychology	3
PSYCH 2311	The Art and Science of Living	3
PSYCH 2320	Introduction to Personality	3
PSYCH 2410	Developmental Psychology	3
or PSYCH 2410H	Developmental Psychology - Honors	
PSYCH 2411	Stories and Selves	3
PSYCH 2510	Survey of Psychopathology	3
or PSYCH 2510H	Survey of Psychopathology - Honors	
PSYCH 2511	Military and Veterans Psychology	3
PSYCH 2520	Introduction to Addiction Science	3
PSYCH 2810	Human Sexuality	3
PSYCH 2830	Human-Companion Animal Interaction	3
PSYCH 3232	Psychology of Trauma	3
PSYCH 3280	Psychology of Death and Dying	3
PSYCH 3310	Intergroup Relations	3
PSYCH 3350	Positive Psychology	3
PSYCH 3351	Positive Motivation	3
PSYCH 3370	The Science of Mindfulness	3
or PSYCH 3370W	The Science of Mindfulness - Writing Intensive	
PSYCH 3420	Cognitive Development in Childhood	3
PSYCH 3430	Social Development in Childhood	3
or PSYCH 3430H	Social Development in Childhood - Honors	
PSYCH 3451	Psychology of Gender	3
PSYCH 3510	Introduction to Clinical Psychology	3
or PSYCH 3510W	Introduction to Clinical Psychology - Writing Intensive	
PSYCH 3511	Emotion Regulation and the Brain	3
PSYCH 3815	Cross-Cultural Psychology	3
PSYCH 3830	Health Psychology	3
PSYCH 3840	Individual Differences	3
PSYCH 3880	African American Psychology	3

PSYCH 4376	Mental Health and Aging	3
PSYCH 4440	Sex Differences	3
PSYCH 4441	Psychology of Youths' Close Relationships	3
PSYCH 4530	Research in Psychopathology	3
PSYCH 4540	Emotional Disorders in Childhood and Adolescence	3
PSYCH 4560	Schizophrenia	3
PSYCH 4561	Psychosis and the Brain	3
PSYCH 4563	Behavioral and Technology Addictions	3
PSYCH 4564	Psychobiology of Sex and Gender	3
PSYCH 4570	Pediatric Neuropsychology	3
PSYCH 4580	Externalizing Spectrum Disorders	3
PSYCH 4830	Psychology of Women	3

Note: Due to overlap in course content, a student may not receive credit for both PSYCH 3350 and ESC_PS 4200.

Cognitive/Neuroscience Distribution

This distribution area studies the mechanisms of the mind and how they are altered by experience. It also examines the biological basis of the behavior of humans and animals. Courses in this distribution area include:

PSYCH 2017	World of Neuroscience	1
PSYCH 2110	Learning, Memory, and Cognition	3
PSYCH 2210	Mind, Brain, and Behavior	3
PSYCH 2220	Drugs and Behavior	3
PSYCH 2810	Human Sexuality	3
PSYCH 2820	Minds, Brains, and Machines	3
PSYCH 3110	Theories of Learning	3
PSYCH 3130	Decisions, Values and Choice	3
or PSYCH 3130H	Decisions, Values and Choice - Honors	
PSYCH 3140	Cognitive Psychology	3
PSYCH 3150	Human Memory	3
PSYCH 3160	Perception and Thought	3
PSYCH 3420	Cognitive Development in Childhood	3
PSYCH 3511	Emotion Regulation and the Brain	3
PSYCH 3830	Health Psychology	3
PSYCH 3890	Music and the Mind	3
PSYCH 4110	Perception	3
PSYCH 4210	Physiological Psychology	3
PSYCH 4240	Cognitive Neuroscience	3
PSYCH 4376	Mental Health and Aging	3
PSYCH 4564	Psychobiology of Sex and Gender	3
PSYCH 4570	Pediatric Neuropsychology	3
PSYCH 4591	Computational Neuroscience	3

Note: A student may not receive credit for PSYCH 2210 if it is taken after PSYCH 4210.

Psychology Electives (2000-level) 6 credit hours

Students must complete 6 credit hours of psychology elective courses numbered 2000 or above. Up to 3 credit hours may include special problems (e.g., PSYCH 2950 or PSYCH 4950), readings (e.g., PSYCH 4960) or

internship (e.g., PSYCH 4940). Capstone Labs may not be counted in this area.

Second Language Alternative for students pursuing a Bachelor of Science in Psychological Sciences

Students pursuing the Bachelor of Science in Psychological Sciences may opt to satisfy the second language requirement through approved alternative coursework consisting of at least 12 credits in courses numbered 2000 or above from any combination of the following subjects: Arabic, Chinese, French, German, Hebrew, Italian, Japanese, Korean, Portuguese, Russian, South Asian Studies, and/or Spanish. These courses may not be used to satisfy other degree requirements with the exception of the Writing Intensive requirement. Students should note that the option of a Second Language Alternative is applicable specifically to the Bachelor of Science in Psychological Sciences. The Second Language Requirement for the Bachelor of Arts in Psychological Sciences and for the Bachelor of Arts in Psychology is 12 to 13 hours of a single second language sequence.

Approved Science Course Tracks

Psychological Sciences Bachelor of Science students must complete 12 credit hours of approved science coursework in **one** of the following five approved areas: Biological Sciences, Chemistry, Computer Science, Mathematics, **or** Statistics. Course grades must be a C- or higher. Grades of D+ or below or U will not be accepted.

Biological Sciences Track

Required Core: (5 hours)

BIO_SC 1500	Introduction to Biological Systems with Laboratory	5
or BIO_SC 1500H	Introduction to Biological Systems with Laboratory Honors	
or BIO_SC 1010 & BIO_SC 1020	General Principles and Concepts of Biology and General Biology Laboratory	

Additional Approved Coursework (at least 7 credit hours from the list below)

BIO_SC 2020	How the Brain Works	1
BIO_SC 2200	General Genetics	4
or BIO_SC 2200H	General Genetics - Honors	
BIO_SC 2300	Introduction to Cell Biology	4-5
or BIO_SC 2300H	Introduction to Cell Biology- Honors	
or BIO_SC 2300HW	Introduction to Cell Biology - Honors/Writing Intensive	
BIO_SC 3400	Evolution and Ecology	3
BIO_SC 3700	Human Physiology	5
BIO_SC 4500	Neurobiology	3
BIO_SC 4590	Computational Neuroscience	3
BIO_SC 4600	Evolution	3
BIO_SC 4640	Behavioral Biology	3-4
BIO_SC 4986	Neurology of Motor Systems	3
BIO_SC 4988	Nerve Cells and Behavior	3
MICROB 2800	Microbiology for Nursing and Health Professions	4
or MICROB 2800H	Microbiology for Nursing and Health Professions - Honors	
MICROB 3200	Medical Microbiology and Immunology	4
MPP 3202	Elements of Physiology	5
or MPP 3202H	Elements of Physiology - Honors	

MICROB 3800	Case-Based Microbiology: Assembling Systemic Health Connections	3
MPP 4202	Medical Physiology	4
or MPP 4202H	Medical Physiology - Honors	
MPP 4204	Medical Pharmacology	4
or MPP 4204H	Medical Pharmacology-Honors	
MICROB 4304	Immunology for Health Professions	3
PTH_AS 2201	Human Anatomy Lecture	3
PTH_AS 2203	Human Anatomy Laboratory	2
or PTH_AS 2203H	Human Anatomy Laboratory - Honors	

Chemistry Track

Required Core: (6 to 8 hours)

CHEM 1400 & CHEM 1401	College Chemistry I and College Chemistry I Laboratory	4
CHEM 1410 & CHEM 1411	College Chemistry II and College Chemistry II Laboratory	4

Additional Approved Coursework (at least 4 to 6 credit hours from list below)

CHEM 2100	Organic Chemistry I	3
CHEM 2110	Organic Chemistry II	3
CHEM 2130	Organic Laboratory I	2
CHEM 2140	Organic Laboratory II	2
CHEM 2170H	Honors Organic Chemistry II with Lab - Honors	5
CHEM 2400	Fundamentals of Inorganic Chemistry with Lab	3
CHEM 3200	Quantitative Methods of Analysis with Lab	4
CHEM 3300	Fundamentals of Physical Chemistry	3
CHEM 4170	Medicinal Chemistry	3
CHEM 4400	Inorganic Chemistry	3

Computer Science Track

Required Core: (8 hours):

CMP_SC 1050	Algorithm Design and Programming I	4
CMP_SC 2050	Algorithm Design and Programming II	4

Additional Approved Coursework (at least 6 credit hours from list below)

CMP_SC 2270	Introduction to Logic Systems	3
CMP_SC 2830	Web Application Development I	3
CMP_SC 3380	Database Applications and Information Systems	3

Mathematical Sciences Track

Required Courses: (The Math Track requires 13 credit hours):

MATH 1500	Analytic Geometry and Calculus I	5
or MATH 1500H	Analytic Geometry and Calculus I - Honors	
MATH 1700	Calculus II	5
or MATH 1700H	Calculus II - Honors	
MATH 2300	Calculus III	3
or MATH 2300H	Calculus III - Honors	

Statistics Track

Required Core: (3 hours)

STAT 3500	Introduction to Probability and Statistics II	3
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Additional Approved Coursework (at least 9 credit hours from list below)

STAT 4110	Statistical Software and Data Analysis	3
STAT 4150	Applied Categorical Data Analysis	3
STAT 4210	Applied Nonparametric Methods	3
STAT 4310	Sampling Techniques	3
STAT 4330	Methods in Sports Analytics I	3
STAT 4340	Methods in Sports Analytics II	3
STAT 4410	Biostatistics and Clinical Trials	3
STAT 4510	Applied Statistical Models I	3
STAT 4540	Experimental Design	3
STAT 4560	Applied Multivariate Data Analysis	3
STAT 4710	Introduction to Mathematical Statistics	3
STAT 4830	Categorical Data Analysis	3

Semester Plan

Below is a sample plan of study semester by semester for a student with the Biological Sciences Track. A student's actual plan may vary based on the B.S. Science Track they choose, credits earned prior to admission, and individual course choices where options are available. Psychology majors are required to earn a C- or higher (no D+ or below) in all Psychology courses, including STAT 2500 or STAT 1200 and STAT 2200 or STAT 1400 and STAT 2200 and all Science Track courses.

First Year			
Fall	CR	Spring	CR
PSYCH 1000		3 Psych Cognitive/Neuroscience Distribution Area	3
Behavioral Science		3 Missouri State Law, Social Science	3
ENGLISH 1000		3 Psychology, B.S. Science Track, Biological Science Lab	5
MATH 1100 (Math and Quantitative Reasoning)		3 Second major, minor, certificate, or elective, 1000+ level	3
Second major, minor, certificate, or elective, 1000+ level		3	
		15	14

Second Year			
Fall	CR	Spring	CR
Psych Clinical/Social/Developmental Distribution Area		3 PSYCH 3010	3
Humanities		3 First Writing Intensive	3
Second major, minor, certificate, or elective, 1000+ level		3 Second Language Requirement	4
Second major, minor, certificate, or elective, 1000+ level		3 Second major, minor, certificate, or elective, 1000+ level	3
STAT 2500 (Mathematical Science)		3 Second major, minor, certificate, or elective, 3000+ level	3
		15	16

Third Year			
Fall	CR	Spring	CR
PSYCH 3020		3 Psych Clinical/Social/Developmental Distribution Area	3
Psych Cognitive/Neuroscience Distribution Area		3 Psychology, B.S. Science Track, Biological Science	5
Psychology, B.S. Science Track		3 Second Language Requirement	4

Second Language Requirement	4 Second major, minor, certificate, or elective, 3000+ level	3
Second major, minor, certificate, or elective, 1000+ level	2	
		15

Fourth Year			
Fall	CR	Spring	CR
Psych Capstone, 4000+ level, Writing Intensive		3 Psych Elective, 4000+ level	3
Psych Elective, 3000+ level		3 Humanities	3
Humanities, 2000+ level		3 Behavioral Science, 2000+ level	3
Second major, minor, certificate, or elective, 1000+ level		3 Second major, minor, certificate, or elective, 3000+ level	3
Second major, minor, certificate, or elective, 3000+ level		3 Second major, minor, certificate, or elective, 3000+ level	3
		15	15

Total Credits: 120