

PSYCHOLOGY

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The Psychology PhD programs in the Department of Psychology are oriented toward training qualified students to pursue careers in research, teaching, and professional practice. Our PhD programs include: Experimental Psychology with a concentration in Affect, Social and Cognitive Psychology, Clinical Psychology with a child emphasis, and Developmental and Child Psychology. We also offer a specialization in Developmental Cognitive Neuroscience (DCN).

Doctor of Philosophy in Experimental Psychology with a Concentration in Affect, Social and Cognitive Psychology

The ASC PhD program will prepare you for research and teaching careers in affective science, social or cognitive psychology. You will work closely with faculty and fellow students in labs using psychophysiological measurement, social cognition paradigms, behavioral measures and neuroscience tools such as fMRI. As a student in the ASC program, you will choose an emphasis: Affect, Social, or Cognitive Psychology. Depending on your emphasis area, there are slight variations in how requirements are completed.

Doctor of Philosophy in Clinical (Child emphasis) Psychology

The graduate program in Clinical Psychology focuses on the etiology, treatment and prevention psychopathology with an emphasis on the childhood and adolescent developmental periods.

Doctor of Philosophy in Developmental and Child Psychology

The graduate program in Developmental Psychology focuses on human developmental processes—including biological, cultural, social and psychophysiological factors.

Developmental Cognitive Neuroscience

The specialization in Developmental Cognitive Neuroscience is open to students in any of the graduate programs in Psychology. It is designed to equip students with advanced knowledge and training in an interdisciplinary approach to neuroscience and psychology. The coursework covers diverse fields and research methods including neuroimaging, computational modeling, eye-tracking, psychophysiology, neuropsychology, neuroendocrinology, and behavioral genetics. The program prepares students to be leaders in collaborative science approaches.

Doctor of Philosophy in Psychology with a Concentration in Affective, Social & Cognitive Psychology

Degree and GPA Requirements

Bachelor's degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.

University GPA requirement: The minimum grade point average for admission consideration for graduate study at the University of Denver must meet one of the following criteria:

- A cumulative 2.5 on a 4.0 scale for the baccalaureate degree.
- A cumulative 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree.
- An earned master's degree or higher from a regionally accredited institution or the recognized equivalent from an international institution supersedes the minimum GPA requirement for the baccalaureate.
- A cumulative GPA of 3.0 on a 4.0 scale for all graduate coursework completed for applicants who have not earned a master's degree or higher.

Standardized Test Scores

- GRE scores are optional for admission to this program. Applications submitted without scores will receive full consideration. Every application undergoes a comprehensive evaluation, including a careful review of all application materials. If you choose to submit test scores, you may upload your Test Taker Score Report PDF, which is considered unofficial. Official scores must be received directly from the appropriate testing agency upon admission to the University of Denver. The ETS institution code to submit GRE scores to the University of Denver is 4842.

English Language Proficiency Test Score Requirements

The minimum TOEFL/IELTS/C1 Advanced/Duolingo English Test score requirements for this degree program are:

- Minimum TOEFL Score (Internet-based test): 80 (including a minimum of 26 on the speaking section)
- Minimum IELTS Score: 6.5 (including a minimum of 8 on the speaking section)
- Minimum C1 Advanced Score: 176 (including a minimum of 200 on the speaking section)
- Minimum Duolingo English Test Score: 115

Doctor of Philosophy in Psychology with a Concentration in Clinical Psychology (Child Emphasis)

Degree and GPA Requirements

Bachelor's degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.

University GPA requirement: The minimum grade point average for admission consideration for graduate study at the University of Denver must meet one of the following criteria:

- A cumulative 2.5 on a 4.0 scale for the baccalaureate degree.
- A cumulative 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree.
- An earned master's degree or higher from a regionally accredited institution or the recognized equivalent from an international institution supersedes the minimum GPA requirement for the baccalaureate.
- A cumulative GPA of 3.0 on a 4.0 scale for all graduate coursework completed for applicants who have not earned a master's degree or higher.

Standardized Test Scores

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- Minimum TOEFL Score (Internet-based test): 80 (including a minimum of 26 on the speaking section)
- Minimum IELTS Score: 6.5 (including a minimum of 8 on the speaking section)
- Minimum C1 Advanced Score: 176 (including a minimum of 200 on the speaking section)
- Minimum Duolingo English Test Score: 115

Doctor of Philosophy in Psychology with a Concentration in Developmental Psychology

Degree and GPA Requirements

Bachelor's degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.

University GPA requirement: The minimum grade point average for admission consideration for graduate study at the University of Denver must meet one of the following criteria:

- A cumulative 2.5 on a 4.0 scale for the baccalaureate degree.
- A cumulative 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree.
- An earned master's degree or higher from a regionally accredited institution or the recognized equivalent from an international institution supersedes the minimum GPA requirement for the baccalaureate.
- A cumulative GPA of 3.0 on a 4.0 scale for all graduate coursework completed for applicants who have not earned a master's degree or higher.

Standardized Test Scores

- GRE scores are optional for admission to this program. Applications submitted without scores will receive full consideration. Every application undergoes a comprehensive evaluation, including a careful review of all application materials. If you choose to submit test scores, you may upload your Test Taker Score Report PDF, which is considered unofficial. Official scores must be received directly from the appropriate testing agency upon admission to the University of Denver. The ETS institution code to submit GRE scores to the University of Denver is 4842.

English Language Proficiency Test Score Requirements

The minimum TOEFL/IELTS/C1 Advanced/Duolingo English Test score requirements for this degree program are:

- Minimum TOEFL Score (Internet-based test): 80 (including a minimum of 26 on the speaking section)
- Minimum IELTS Score: 6.5 (including a minimum of 8 on the speaking section)
- Minimum C1 Advanced Score: 176 (including a minimum of 200 on the speaking section)
- Minimum Duolingo English Test Score: 115

Doctoral Program

Doctor of Philosophy in Clinical Psychology (Child Emphasis)

Coursework Requirements

Students earn a master's degree on their way toward obtaining the PhD; however, students are not required to obtain an official master's degree. All students are required to fulfill the requirements for the master's degree, regardless of whether or not they apply for graduation for an official master's degree. Completion of master's degree requirements is required in order to be advanced to preliminary doctoral candidacy.

Degree requirements

Minimum number of credits required for the degree: 120

Course requirements

Code	Title	Credits
I. Master's degree requirements		
The Department requires completion of the master's degree requirements as part of the Ph.D. program. To earn an official master's degree, complete at least 28 credits of the 45 minimum number of credits in content coursework which excludes Independent Study and Independent Research credits.		
Total credits for master's degree - 45		
II. PhD requirements		
Statistics requirement		8
PSYC 4295	Research Design & Inference	
PSYC 4300	Correlation and Regression	
Advanced statistics (1 course from below):		4
PSYC 4330	Analysis of Variance	
PSYC 4350	Structural Equation Modeling for the Social Sciences	
PSYC 4355	Multilevel Modeling for the Psychological Sciences: Theory and Applications	
Or both Programming courses listed below:		
PSYC 4360	Programming Psychology: Experiment Building with Python	
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	
Core coursework requirements		16
A. Cognitive Psychology		
Select one		
PSYC 4002	Prosem in Memory and Cognition	
PSYC 4525	Prosem in Develop Neuropsych	
B. Neuroscience		
Select one		
PSYC 4526	Prosem in Cog Neuroscience	
PSYC 4262	Affective Neuroscience	
PSYC 4045	Proseminar in Human Brain Development	
C. Social/Personality/Emotions		
PSYC 4021	Prosem in Social Psychology	
D. Developmental Psychology		
Select one		

PSYC 4032	Developmental Proseminar: Social-Emotional	
PSYC 4033	Devel Proseminar: Biological	
Other Required Courses		
Clinical Science		8
PSYC 4512	Prosem in Psychopathology	
PSYC 4565	Systems of Psychotherapy	
Ethics		4
PSYC 4920	Ethics in Psychological Research & Practice	
PSYC 4925	Clinical Ethics and Professional Issues in Psychology	
Multicultural Competency		4
PSYC 4571	Multicult Issues & Ment Health	
Clinical Assessment		8
PSYC 4411	Assessment-Cognition	
PSYC 4413	Assessment-Psychopathology (Social, Emotional, and Behavioral)	
Advanced Clinical		8
Advanced clinical requirement: Two advanced clinical courses from the options below (one course must be an intervention course). Choose from the following options:		8
PSYC 4085	Stress & Health	
PSYC 4688	Clinical Psychopharmacology	
PSYC 4566	Systems of Psychotherapy II	
PSYC 4620	Advan in Couples Intervention	
PSYC 4625	Couple Therapy with Diverse Populations	
PSYC 4518	Readings in Family Therapy	
Clinical Practica		
Students in years 2, 3, and 5 should register for 0 credits of the below courses, whereas students in year 4 should register for four credits each quarter. *Note that the Practicum course number differs each year.		
PSYC 4928	Initial Clinical Practicum	0
PSYC 4929	Advanced Clinical Practicum	0
PSYC 4930	Psychology Practicum-Clinical	1-5
PSYC 4933	Psychology Practicum - Advanced Clinical	0
Tool Requirement		8
Electives		44
Additional courses at DU, no more than 8 credits outside PSYC department, minimum 56 credit hours total must be content courses, to minimum of 120 credit hours		
Total Credits		121-125

Non-coursework Requirements

- Master's research paper or thesis and oral defense
- Dissertation Prospectus and Prospectus Meeting
- Dissertation and Oral Defense
- Clinical Training
 - Clinical Practicum
 - Successful Completion of an Externship
 - Successful completion of all Professional wide competencies and Professional and Technical Standards
 - Successful Completion of an APA approved internship

Specialization: Developmental Cognitive Neuroscience Requirements

The following requirements for the DCN specialization are in addition to the student's area requirements. The DCN specializations affects how students meet core and tool requirements. DCN students in each of the three majors/areas of the department have additional core requirements.

DCN also affects advanced clinical requirements for clinical DCN students and elective requirements for non-clinical DCN students (see below). The neuroscience methods courses listed below which fulfill the DCN tool requirement are also sufficient to fulfill their area's tool requirement.

Any entering student who wishes to specialize in DCN must demonstrate competency in basic neurobiology (e.g., have taken an undergraduate class in biological psychology, neuroanatomy, psychophysiology, etc.). If not, they must take Introduction to Neurobiology offered by the department of Biological Sciences.

Students must take four of the following required core courses (any four):

PSYC 4002	Prosem in Memory and Cognition
PSYC 4033	Devel Proseminar: Biological
PSYC 4045	Proseminar in Human Brain Development
PSYC 4262	Affective Neuroscience
PSYC 4526	Prosem in Cog Neuroscience
PSYC 4660	Perception: A Cognitive Neuroscience Approach

DCN students must also take two of the following tool/methods courses, or have an equivalent approved by the DCN area head:

PSYC 4085	Stress & Health	4
PSYC 4255	Imaging the Mind	4
PSYC 4360	Programming Psychology: Experiment Building with Python	4
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	4
PSYC 4525	Prosem in Develop Neuropsych	4
PSYC 4665	Executive Functioning	4
PSYC 4688	Clinical Psychopharmacology	4

Doctor of Philosophy in Developmental and Child Psychology

Coursework Requirements

Students earn a master's degree on their way toward obtaining the PhD; however, students are not required to obtain an official master's degree. All students are required to fulfill the requirements for the master's degree, regardless of whether or not they apply for graduation for an official master's degree. Completion of master's degree requirements is required in order to be advanced to preliminary doctoral candidacy.

I. Master's degree requirements

The Department requires completion of the Master's degree requirements as part of the Ph.D. program. To earn an official master's degree, complete at least 28 credits of the 45 minimum number of credits in content coursework which excludes Independent Study and Independent Research credits.

Total credits for master's degree 45

Code	Title	Credits
I. Master's degree requirements		
The Department requires completion of the master's degree requirements as part of the Ph.D. program. To earn an official master's degree, complete at least 28 credits of the 45 minimum number of credits in content coursework which excludes Independent Study and Independent Research credits.		
Hours required for masters degree - 45		
II. PhD requirements		
Statistics		
PSYC 4295	Research Design & Inference	4
PSYC 4300	Correlation and Regression	4
Advanced Stat Course		4
PSYC 4330	Analysis of Variance	
PSYC 4350	Structural Equation Modeling for the Social Sciences	
PSYC 4355	Multilevel Modeling for the Psychological Sciences: Theory and Applications	
or both Programming courses listed below:		8
PSYC 4360	Programming Psychology: Experiment Building with Python	
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	
Core coursework requirements		

Complete one course from four of the five categories (Cognitive Psychology, Neuroscience, Social/Personality/Emotions, Developmental Psychology, and Clinical Science)	16
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A. Cognitive Psychology

One required

PSYC 4002	Prosem in Memory and Cognition
PSYC 4525	Prosem in Develop Neuropsych

B. Neuroscience

PSYC 4526	Prosem in Cog Neuroscience
PSYC 4262	Affective Neuroscience
PSYC 4045	Proseminar in Human Brain Development

C. Social/Personality/Emotions

PSYC 4011	Proseminar in Emotion
PSYC 4020	Proseminar in Personality
PSYC 4021	Prosem in Social Psychology

D. Developmental Psychology

Both required

PSYC 4032	Developmental Proseminar: Social-Emotional
PSYC 4033	Devel Proseminar: Biological

E. Clinical Science

PSYC 4512	Prosem in Psychopathology
PSYC 4565	Systems of Psychotherapy

Ethics

Complete the following course

PSYC 4920	Ethics in Psychological Research & Practice	2
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Tool Requirement	8
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Electives	74
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Additional courses at DU, no more than 8 credits outside PSYC department, minimum 56 credit hours total must be content courses, to minimum of 120 credit hours

Total Credits	120
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Non-coursework Requirements

- First-Year Project or Paper
- Master's research paper or thesis and oral defense
- Developmental Comprehensive Exams
- Presentation Requirement
- Dissertation Prospectus and Prospectus Meeting
- Dissertation and Oral Defense

Specialization: Developmental Cognitive Neuroscience Requirements

The following requirements for the DCN specialization are in addition to the student's area requirements. The DCN specializations affects how students meet core and tool requirements. DCN students in each of the three majors/areas of the department have additional core requirements. DCN also affects advanced clinical requirements for clinical DCN students and elective requirements for non-clinical DCN students (see below). The neuroscience methods courses listed below which fulfill the DCN tool requirement are also sufficient to fulfill their area's tool requirement.

Any entering student who wishes to specialize in DCN must demonstrate competency in basic neurobiology (e.g., have taken an undergraduate class is biological psychology, neuroanatomy, psychophysiology, etc.). If not, they must take Introduction to Neurobiology offered by the department of Biological Sciences.

Students must take four of the following required core courses (any four):

Code	Title	Credits
PSYC 4002	Prosem in Memory and Cognition	
PSYC 4033	Devel Proseminar: Biological	
PSYC 4045	Proseminar in Human Brain Development	
PSYC 4262	Affective Neuroscience	

PSYC 4526	Prosem in Cog Neuroscience
PSYC 4660	Perception: A Cognitive Neuroscience Approach

DCN students must also take two of the following tool/methods courses, or have an equivalent approved by the DCN area head:

Code	Title	Credits
PSYC 4085	Stress & Health	4
PSYC 4255	Imaging the Mind	4
PSYC 4360	Programming Psychology: Experiment Building with Python	4
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	4
PSYC 4525	Prosem in Develop Neuropsych	4
PSYC 4665	Executive Functioning	4
PSYC 4688	Clinical Psychopharmacology	4

Doctor of Philosophy in Experimental Psychology (Required Concentration in Affective, Cognitive, and Social psychology)

Students earn a master's degree on their way toward obtaining the PhD; however, students are not required to obtain an official master's degree. All students are required to fulfill the requirements for the master's degree, regardless of whether or not they apply for graduation for an official master's degree. Completion of master's degree requirements is required in order to be advanced to preliminary doctoral candidacy.

Degree requirements

Minimum number of credits required for the degree: 120

Course requirements

Code	Title	Credits
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I. Master's degree requirements

The Department requires completion of the master's degree requirements as part of the Ph.D. program. To earn an official master's degree, complete at least 28 credits of the 45 minimum number of credits in content coursework which excludes Independent Study and Independent Research credits.

Total credits for master's degree	45
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II. PhD requirements

Statistics Requirements

PSYC 4295	Research Design & Inference	4
PSYC 4300	Correlation and Regression	4

Advanced Stat Course (one from below):		4
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PSYC 4350	Structural Equation Modeling for the Social Sciences	
PSYC 4355	Multilevel Modeling for the Psychological Sciences: Theory and Applications	

or both Programming courses listed below:		8
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PSYC 4360	Programming Psychology: Experiment Building with Python	
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	

Core coursework requirements

Complete one course from four of the five categories (Cognitive Psychology, Neuroscience, Social/Personality/Emotions, Developmental Psychology, and Clinical Science)

A. Cognitive Psychology		4
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PSYC 4002	Prosem in Memory and Cognition	
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B. Neuroscience (1 from below):		4
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PSYC 4045	Proseminar in Human Brain Development	
PSYC 4526	Prosem in Cog Neuroscience	
PSYC 4262	Affective Neuroscience	

C. Social/Personality/Emotions		4
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PSYC 4011	Proseminar in Emotion	
PSYC 4020	Proseminar in Personality	
PSYC 4021	Prosem in Social Psychology	

Note: ASC students must take one core course in affect (Proseminar in Emotion or Proseminar in Affective Neuroscience), one in social (Proseminar in Social Psychology), and one in cognitive psychology (Proseminar in Memory and Cognition or Proseminar in Cognitive Neuroscience), and one additional core course

D. Developmental Psychology		4
PSYC 4032	Developmental Proseminar: Social-Emotional	
PSYC 4033	Devel Proseminar: Biological	
E. Clinical Science		4
PSYC 4512	Prosem in Psychopathology	
PSYC 4565	Systems of Psychotherapy	
Ethics		2
Complete the following course:		
PSYC 4920	Ethics in Psychological Research & Practice	
Specialty Seminars		
Students are expected to take at least 2 specialty seminars in their program (or another, pending approval of their advisor) whenever they are offered. Proseminars not used to meet the core requirements may be used.		8
PSYC 4028	Social Cognition	
PSYC 4025	Intergroup Relations	
PSYC 4015	Nonverbal Behavior	
PSYC 4660	Perception: A Cognitive Neuroscience Approach	
PSYC 4665	Executive Functioning	
Tool Requirement		8
Electives		
Additional courses at DU, no more than 8 credits outside PSYC department, minimum 56 credit hours total must be content courses, to minimum of 120 credit hours		

Non-coursework requirements:

- Master's research paper or thesis and oral defense
- Teaching
- Qualifying Paper or Qualifying Exam
- Dissertation Prospectus and Prospectus Meeting
- Dissertation and Oral Defense

Specialization: Developmental Cognitive Neuroscience Requirements

The following requirements for the DCN specialization are in addition to the student's area requirements. The DCN specializations affects how students meet core and tool requirements. DCN students in each of the three majors/areas of the department have additional core requirements. DCN also affects advanced clinical requirements for clinical DCN students and elective requirements for non-clinical DCN students (see below). The neuroscience methods courses listed below which fulfill the DCN tool requirement are also sufficient to fulfill their area's tool requirement.

Any entering student who wishes to specialize in DCN must demonstrate competency in basic neurobiology (e.g., have taken an undergraduate class is biological psychology, neuroanatomy, psychophysiology, etc.). If not, they must take Introduction to Neurobiology offered by the department of Biological Sciences.

Students must take four of the following required core courses (any four):

Code	Title	Credits
PSYC 4002	Prosem in Memory and Cognition	
PSYC 4033	Devel Proseminar: Biological	
PSYC 4045	Proseminar in Human Brain Development	
PSYC 4262	Affective Neuroscience	
PSYC 4526	Prosem in Cog Neuroscience	
PSYC 4660	Perception: A Cognitive Neuroscience Approach	

DCN students must also take two of the following tool/methods courses, or have an equivalent approved by the DCN area head:

Code	Title	Credits
PSYC 4085	Stress & Health	4
PSYC 4255	Imaging the Mind	4
PSYC 4360	Programming Psychology: Experiment Building with Python	4
PSYC 4365	Programming Psychology: Model-Fitting and Analysis	4
PSYC 4525	Prosem in Develop Neuropsych	4
PSYC 4665	Executive Functioning	4
PSYC 4688	Clinical Psychopharmacology	4

Dual Undergraduate/Graduate Master's Program

Master of Arts in Psychology Dual Degree with BA or BS in Psychology

Minimum of 45 credits required for the MA. 28 credits must be content courses.

Code	Title	Credits
Foundations In Research Methods and Statistics		
PSYC 4295	Research Design & Inference	4
PSYC 4300	Correlation and Regression	4
In addition to PSYC 4295 and PSYC 4300 you must choose one of the following Advanced Statistics Course:		4
PSYC 4330	Analysis of Variance	
PSYC 4350	Structural Equation Modeling for the Social Sciences	
PSYC 4355	Multilevel Modeling for the Psychological Sciences: Theory and Applications	
Ethics		
PSYC 4920	Ethics-Psych & Rsrch Practice	2
Proseminar Courses		
Choose two of the following:		8
PSYC 4002	Prosem in Memory and Cognition	
PSYC 4011	Proseminar in Emotion	
PSYC 4021	Prosem in Social Psychology	
PSYC 4032	Developmental Proseminar: Social-Emotional	
PSYC 4033	Devel Proseminar: Biological	
Electives		
A minimum of two elective courses in PSYC must be taken		8
Master's Thesis		
PSYC 5995	Independent Research	1-10
Additional Credit Hours		
Additional elective courses or independent research to reach 45 credit minimum		

All courses for the MA must be taken at the 4000#level or above. No course can count for undergraduate and graduate level credit hours. Cross# listed courses taken at one level may not be retroactively applied to another, as requirements and grading criteria may differ.

Programs non#course requirements.

Successful completion of master's research paper or thesis and oral defense.

Grade Requirement:

A grade lower than "C-" renders the credit unacceptable for meeting University degree requirements. Grades of "C-" or better qualify for graduate credit but may not count towards the degree. Students should consult with their program to understand unit-specific minimum grade requirements.

Admission requirements:

- Current undergraduate student at DU
- Minimum of 120 credit hours completed when applications are due
- Signed certification from psychology major advisor that undergraduate degree requirements can be fit in alongside MA program
- Completion of Intro Stats (PSYC 2300) or equivalent and Research Methods (PSYC 3050) with a B or higher before Autumn Quarter of the year they begin the program (4th year or equivalent)

- Letter of support from faculty member willing to oversee research thesis, stating research potential as well as capability to contribute to graduate classes
- Completion of personal statement outlining research interests, career goals, and briefly outlining how a research-based MA program will help them achieve those goals

PSYC 3020 Adolescence (4 Credits)

This course examines development during the adolescent years exploring biological, cognitive, and social transitions central to this developmental stage. It considers key contexts in which adolescents develop: families, peer groups, schools, work, leisure, and the mass media. Special attention is given to the importance of diverse social and cultural experiences and its impact on adolescent behavior and cognition. Prerequisites: PSYC2070 and PSYC3050, must be major or minor in psychology, must have junior or senior standing.

PSYC 3029 Imaging the Mind (4 Credits)

Imaging the Mind is an introductory course to the basic theory and data analysis techniques used in functional magnetic resonance imaging (fMRI). It will cover basic brain anatomy, the basic physics of MRI, experimental design, data processing and the issues associated with data processing, and interpretation of fMRI data. Students in this course will receive hands-on experience in processing a data set from start to finish. They will apply different image preprocessing techniques, statistical design parameters, and statistical models to determine how these factors influence the outcome of the data and how these factors influence the interpretation of that data. In this manner, each student will be exposed individually to the decision issues and interpretation pitfalls involved in fMRI data analysis. Cross listed with PSYC 4255. Prerequisites: PSYC 2031 and PSYC 3050, must be major or minor in psychology, must have junior standing. Permission of the instructor required.

PSYC 3032 Introduction to Neural Networks (4 Credits)

Introduction to basic principles and computational methods in artificial neural network modeling; neural models of cognitive and psychological processes examined and evaluated. Cross listed with PSYC 4254. Prerequisite: PSYC 1001 and PSYC 3050. Must be major or minor in psychology. Must have junior standing. Permission of instructor required.

PSYC 3035 Seminar: Cognitive Neuroscience (2 Credits)

This seminar is for students in the cognitive neuroscience specialization, a joint program with Biological Sciences. The goal of the seminar is to provide an opportunity for senior-level cognitive neuroscience majors to apply the knowledge and skills they have acquired in other courses to current cutting-edge topics in the field. Prerequisites: PSYC 2031 and PSYC 3050, must have cognitive neuroscience concentration, must have senior standing.

PSYC 3151 Senior Honors Research Seminar (1-5 Credits)

In conjunction with senior research thesis. Prerequisites: PSYC 2750, PSYC 2751 and PSYC 2752.

PSYC 3152 Senior Honors Research Seminar (1-5 Credits)

In conjunction with senior research thesis. Prerequisites: PSYC 2751 and PSYC 2752.

PSYC 3350 Cultural Psychology (4 Credits)

This seminar examines how people's sociocultural context shapes their thoughts, feelings, and behaviors. To approach this question, we read and discuss classic as well as recent theoretical and empirical articles from the field of cultural psychology. Topics include defining culture; dimensions of cultural variation; culture-biology interactions; methodological considerations; cultural influences on cognition, emotion, the self, moral judgment, and health; cultural neuroscience; cultural approaches to race and ethnicity; and mechanisms of cultural influence. Throughout, this course emphasizes sociocultural diversity in psychological processes. Students are encouraged to develop empirically tractable ways of asking and answering questions relating to cultural psychology and to apply concepts of cultural psychology to their own research. Prerequisite: PSYC 2740 and PSYC 3050; must be a major or minor in psychology, must have junior standing.

PSYC 3666 Brain Development & Cognition (4 Credits)

Examines what the brain tells us about development and what development tells us about the brain. Topics include subcortical and cortical developments to the acquisition of language and drawing. Prerequisites: PSYC 2070 and PSYC 3050; must be major or minor in psychology, must have junior standing.

PSYC 3700 Artificial Intelligence and Psychological Science: Exploring Human-Computer Interactions (4 Credits)

This seminar explores the intersections of artificial intelligence, human-computer interaction, psychology, and neuroscience with a focus on how AI technologies—such as generative AI, conversational agents, and social robots—shape and are shaped by human cognition, social behavior, development, and cultural context. Students will critically analyze research on AI's impact on social relationships, child development, cognition, brain function, and mental health. Students will engage in discussions that bridge psychological theory with AI technology. Topics include emotional and social connections with robots, cultural influences on AI interaction, ethical and safety concerns, and the neurocognitive implications of AI in our daily lives. This course aims to provide an understanding of AI's role in human psychological processes and its impacts on our functions across various domains, including education, health care, and social relationships.

PSYC 3701 Topics in Psychology (1-4 Credits)

Prerequisites: PSYC 1001 and PSYC 3050; must be major or minor in psychology, must have junior standing.

PSYC 3991 Independent Study (1-10 Credits)

Maximum of 5 hours per quarter not to exceed a total of 10 quarter hours.

PSYC 4002 Prosem in Memory and Cognition (4 Credits)

Theory/research on thinking, problem solving, language, creative thought, other aspects of knowing process.

PSYC 4011 Proseminar in Emotion (4 Credits)

Social/physiological aspects of emotions, including motivation, physiological processes, basic emotions, cognitive appraisal, cross-cultural issues, empathy, effects of emotions.

PSYC 4015 Nonverbal Behavior (4 Credits)

This course will be cross-listed with Psyc 3015 (undergraduate students in 3015 and graduate students in 4015 will be seated in the same classroom but will have different requirements). Most humans speak for a very small portion of their day (by most estimates, an hour or less) but during every waking moment of your life, you display nonverbal behaviors. These behaviors include facial expressions, eye gaze, posture, head movements, movement toward and away from things, gestures, distance from other people, vocal intonation, and many other subtle bodily actions. In this class, we will survey an enormous scientific literature regarding the causes and consequences of nonverbal behaviors. Our focus will be on nonverbal behavior in humans, but we will also review the role of nonverbal behavior in the social life of human and non-human animals alike. Topics include, but are not limited to questions such as: What methods should scientists use to examine the causes and consequences of nonverbal behavior? Do nonverbal behaviors reveal emotions and other psychological states or do nonverbal behaviors instead function for the purpose of social influence? What is the role of nonverbal behavior in deception and the detection of deception? Do people non-consciously process the social meaning of others' nonverbal behaviors?

PSYC 4020 Proseminar in Personality (4 Credits)

Personality structure/dynamics, theory and findings, interrelationships between personality and socio-cultural determinants of behavior.

PSYC 4021 Prosem in Social Psychology (4 Credits)

Major theoretical issues and empirical research in social psychology; topics include cultural, social structure, cognitive consistency, social neuroscience, social cognition, person perception, the self, social influence, attitudes, relationships, emotion, coping.

PSYC 4025 Intergroup Relations (4 Credits)

This course is intended to provide a foundation in understanding how individuals and groups relate to each other within a social structure. Social groups can take many forms, ranging from classic social groups (e.g., race, gender, ethnicity, religion, sexual orientation) to minimal groups where membership is arbitrary. This course will explore foundational principles in classic and contemporary research on intergroup relations.

PSYC 4028 Social Cognition (4 Credits)

Social cognition describes how people make sense of themselves and others. The emphasis on "how" is important—social cognition research focuses on perceptual, cognitive, and affective processes that help people think about themselves and others. You will learn about the theories, findings, and methods in a specific area of study.

PSYC 4032 Developmental Proseminar: Social-Emotional (4 Credits)

Problems/theories in developmental psychology including Piagetian theory, language, emotional, perceptual, personality development, learning, biological bases of behavior, genetic influences.

PSYC 4033 Devel Proseminar: Biological (4 Credits)

This course provides an overview of major biological processes during development and their effects on physical, cognitive, and social development. Specific topics will include: history, concepts, and central themes of developmental psychology; theoretical and biological models of human development (e.g., developmental psychobiological systems view); brain development and plasticity; behavioral genetics; sleep and circadian rhythms; sexual differentiation and hormonal influences on behavior; stress and the HPA axis; effects of nutrition and toxic substances.

PSYC 4045 Proseminar in Human Brain Development (4 Credits)

This course offers an overview of current research and methodologies in the field of developmental cognitive, affective, and social neuroscience. It explores the insights that the brain provides about development and, conversely, what development reveals about the brain. Topics covered include sensitive periods for neuroplasticity, pediatric neuroimaging techniques, and the development of cognitive, affective, and social processes, as well as the impact of environmental factors. Emphasis is placed on discussing current research, evaluating findings, and proposing new research ideas in the field. Prerequisite: Instructor permission.

PSYC 4055 The Neuroscience and Psychology of Parenthood and Parent-Child Relationships (4 Credits)

This course explores the theory, research and issues relevant to parenthood and parent-child relationships. The course overviews the evolutionary, neurobiological, and psychological perspective of parent-child relationships with a focus on the understanding of recent advances in neuroscience research. Topics include neuroplasticity of parental brain, maternal vs. paternal biology for parenting, and social and biological determinants of parent-child relationships. Emphasis is placed on discussion of current research, evaluation of the findings, and proposals and ideas of new research in the field. The goal is not to memorize facts but rather to learn to think like a developmental cognitive/social neuroscientist. Cross-listed with course PSYC 3055. Prerequisite: Instructor permission.

PSYC 4081 Racism in Psychology (4 Credits)

Racism in Psychology will explore ways individual and systemic racism embedded within psychology shapes research, pedagogy, clinical practice and policy.

PSYC 4085 Stress & Health (4 Credits)

This course will serve as an introduction to the field of psychoneuroimmunology, with a focus on stress and development. The first section of the course will review basic immunology including immune system components and functions, and relations between the immune system and other systems. The later portion of the course will focus on effects of stress for different disease mechanisms (infection, allergy, cancer etc). Instructor approval required.

PSYC 4235 Teaching Psychology (1-5 Credits)

Experiential approach to learning techniques for teaching psychology.

PSYC 4240 Neurodiversity Affirming Assessment and Intervention (4 Credits)

This is a cross-listed course with both a graduate section and an undergraduate section. The primary goal of this course is to teach undergraduate students about neurodiversity across the lifespan by examining the assessment practices for diagnosis and examining the research on the evidence-based interventions. The course will discuss neurodiversity generally; however, when discussing assessment and intervention practices, the course will focus on practices specific to autism spectrum disorder. For graduate students, the course will cover these same topics with an additional goal of providing graduate students in the Clinical Child Psychology Ph.D. program with deeper knowledge of how to assess and conduct evidence-based practices with neurodiverse clients themselves. For both undergraduate and graduate students, course instruction will involve a combination of didactic reading, guided practice (i.e., role-play) and case presentations/case examples. For graduate students in the Clinical Psychology Ph.D. program, course instruction will also include supervised experience conducting evidence-based assessment and/or interventions for neurodiverse clients who present to the Center for Child and Family Psychology for diagnosis or treatment.

PSYC 4241 Seminar-Discourse Processes (4 Credits)**PSYC 4254 Intro to Neural Network Models (4 Credits)**

Cross listed with PSYC 3032.

PSYC 4255 Imaging the Mind (4 Credits)

Imaging Cognition is an introductory course to the basic theory and data analysis techniques used in functional magnetic resonance imaging (fMRI). It will cover basic brain anatomy, the basic physics of MRI, experimental design, data processing and the issues associated with data processing, and interpretation of fMRI data. Students in this course will receive hands-on experience in processing a data set from start to finish. They will apply different image preprocessing techniques, statistical design parameters, and statistical models to determine how these factors influence the outcome of the data and how these factors influence the interpretation of that data. In this manner, each student will be exposed individually to the decision issues and interpretation pitfalls involved in fMRI data analysis. Cross listed with PSYC 3029.

PSYC 4256 Seminar:Cognitive Neuroscience (4 Credits)

Neural systems underlying human perception, memory, language, pathological syndromes that result from damage to these systems.

PSYC 4257 Psychophys & Neuroscience Lab (4 Credits)**PSYC 4258 Social Neuroscience (4 Credits)****PSYC 4262 Affective Neuroscience (4 Credits)**

Affective neuroscience is the study of emotions in the brain. In this course, we explore how new frontiers in emotion research, from brain scans to psychoactive drugs to monkey colonies, have changed the way we think about emotions and moods. We aim to learn how scientists ask these new questions: how and what can we learn about emotion from animal models, patient studies, genetic studies, brain scans, and drugs? We learn and debate different theories about what emotions are: when are emotions helpful and harmful? Why do we have them? How many are there? Can we control how we feel? Finally, we learn how to think about emotions scientifically: What kind of evidence matters? How do emotion scholars talk about their work? What kind of questions can we ask, and what kind can we hope to answer?.

PSYC 4295 Research Design & Inference (4 Credits)**PSYC 4300 Correlation and Regression (4 Credits)**

The course reviews the logic of statistical inference before introducing the procedures of correlation and regression. We begin with simple bivariate relationships before moving on to multivariate relationships for both categorical and continuous independent variables. Topics in regression include multicollinearity, variable selection, and curvilinear relationships. The course emphasizes the (stringent) requirements needed to be able to interpret correlational data in terms of cause and effect. The course also emphasizes the assessment of interactions in regression analysis for both categorical and continuous independent variables. Also included is basic coverage of logistic regression and regression assumptions. Prerequisite: PSYC 4295.

PSYC 4305 Psychology of Inequality (4 Credits)

In this course, we examine economic inequality through a psychological lens. First, we explore current trends in economic inequality and discuss how people perceive and evaluate these disparities. Then, we dive into research about why inequality persists, examining common beliefs about fairness, justice, and motivation, social structures that entrench disparities, and prejudices about marginalized groups. We will also explore the wide-ranging consequences of inequality on politics, health, emotions, decision-making and behavior.

PSYC 4330 Analysis of Variance (4 Credits)

Complex analysis of variance, other quantitative methodologies. Prerequisite: PSYC 4300 or instructor's permission.

PSYC 4350 Structural Equation Modeling for the Social Sciences (4 Credits)

This advanced course covers the basics of structural equation modeling and how this flexible approach to statistical analysis can be applied in the social sciences. Specific techniques that will be covered will include testing for mediation, path analysis, confirmatory factor analysis, and the analysis of longitudinal data, as well as other related topics. There will be an emphasis on applying these techniques to students' own research through hands-on demonstrations and homework assignments and an emphasis on interpreting and critiquing structural equation models in published research. A course on correlational methods and regression is a pre/co-requisite.

PSYC 4355 Multilevel Modeling for the Psychological Sciences: Theory and Applications (4 Credits)

This advanced course covers the basics of multilevel (hierarchical) linear modeling and how this flexible approach to statistical analysis can be applied to theory and data in the psychological sciences. Specific techniques that will be covered include the analysis of nested data, family and dyadic data, and longitudinal data as well as mediation and moderation. There will be an emphasis on applying these techniques to students' own research through hands-on demonstrations and homework assignments. There will also be an emphasis on interpreting and critiquing multilevel modeling analyses in published research. Courses on analysis of variance as well as correlational methods and regression are pre/corequisites.

PSYC 4360 Programming Psychology: Experiment Building with Python (4 Credits)

This graduate-level course provides an introduction to computer programming. The goal of the course is to help psychology students develop practical coding skills in Python that will allow them to design and create complex, computer-based experiments. Students will also learn to analyze and plot data. No previous experience with programming is required (or expected). The course begins with an introduction to basic principles of programming with Python. From there, students learn to code by solving challenges specific to the design/construction of a psychological/vision-based experiment. The class is highly interactive— each class includes a mixture of lecture, group-based problem solving, and coding in teams or individually. This class is highly recommended for students who wish to improve their programming proficiency before enrolling in PSYC 4365, although it is not a prerequisite.

PSYC 4365 Programming Psychology: Model-Fitting and Analysis (4 Credits)

An introduction to creating, fitting, and performing statistical inference using computational models with an emphasis on binary choice data. The aims of this course include familiarizing students with the mathematical basis of model-fitting, learning the value of taking a variety of approaches to fitting trial-by-trial data, and giving students practical hands-on experience with maximum likelihood fitting methods. This course will use both MATLAB and R. Though not a prerequisite, this course is intended to follow Programming Psychology: Experiment Building in MATLAB (PSYC 4360), and so will assume students already have a basic knowledge of coding in MATLAB (including debugging, scripts, functions, loops, and plotting). This course is open to graduate students outside of the Department of Psychology.

PSYC 4411 Assessment-Cognition (4 Credits)

This course will provide students with a graduate level overview of theory, research, and practice in the measurement of cognitive functioning. Students will gain practical skills in administering standardized measures of cognitive and academic functioning. They will also develop skills in interpreting cognitive test results and recognizing patterns in cognitive profiles related to specific learning and developmental disorders.

PSYC 4413 Assessment-Psychopathology (Social, Emotional, and Behavioral) (4 Credits)

Overview of evidence-based psychological assessment (emotional, behavioral, and social) with a focus on integrating theory, research, and clinical practice.

PSYC 4512 Prosem in Psychopathology (4 Credits)**PSYC 4518 Readings in Family Therapy (4 Credits)**

This course will survey major historical and contemporary theories from the field of family therapy. Basic family therapy techniques will be covered, and integrated with other modes of therapy (e.g. individual, marital). In the second half of the course, students will work with families and receive group supervision.

PSYC 4525 Prosem in Develop Neuropsych (4 Credits)

We will cover the theory and measurement of brain-behavior relations across the lifespan in several major neuropsychological domains, including executive functions, language, memory, and visual-spatial function. As is characteristic of the developmental neuropsychological field, students will learn to integrate information across multiple levels of analysis (genetic, brain, cognitive, behavioral) and draw on principles of neural and cognitive development in their application of neuropsychological theory to research and clinical issues. We will discuss current controversies in the field and continued areas for growth.

PSYC 4526 Prosem in Cog Neuroscience (4 Credits)

This is a graduate-level introduction to cognitive neuroscience. It covers basic theories of cognition and their neurological support.

PSYC 4565 Systems of Psychotherapy (4 Credits)

The course provides an introduction to evidence-based treatment for children and adolescents. Conceptual and empirical underpinnings of youth therapies are examined. Treatments for three prominent child and adolescent disorders - disruptive behavior problems, depression, and anxiety disorders - are highlighted. Demonstration and practice of specific treatment components is included.

PSYC 4566 Systems of Psychotherapy II (4 Credits)

Conceptual/empirical foundations of interventions for clinical problems, including (but not limited to) parasuicidality, Borderline Personality Disorder, and substance abuse.

PSYC 4571 Multicult Issues & Ment Health (4 Credits)

Theory, research, and practice issues related to the mental health of racial/ethnic minority and other diverse groups.

PSYC 4587 Workshop in Marital Therapy (4 Credits)**PSYC 4612 Marital Conflict (1-10 Credits)****PSYC 4620 Advan in Couples Intervention (4 Credits)****PSYC 4625 Couple Therapy with Diverse Populations (4 Credits)**

This is a cross-listed course with both a graduate section and an undergraduate section. The primary goal of this course is to teach undergraduate students about the field of couple therapy, the different therapeutic approaches in evidence-based couple therapy and research on couple therapy and couple-focused interventions. For graduate students, the course covers these same topics with an additional goal of providing graduate students in the Clinical Psychology Ph.D. program how to conduct evidence-based couple therapy in practice. For both undergraduate and graduate students, course instruction involves a combination of didactic reading, guided practice (i.e., role-play) and case presentations / case example. For graduate students in the Clinical Psychology Ph.D. program, course instruction also includes supervised experience conducting evidence-based couple therapy with couples who present to the Center for Child and Family Psychology for treatment of relationship distress, co-morbid chronic health conditions and relationship distress, or relationship enhancement.

PSYC 4660 Perception: A Cognitive Neuroscience Approach (4 Credits)

An introduction to human perception with a strong emphasis on visual perception. This course evaluates the current understanding of how neural activity in the brain allows people to perceive basic sensory features (e.g., brightness, color, size, position, depth, movement, loudness and pitch) as well as recognize and discriminate complex perceptual patterns (e.g., 2D-shapes, 3D-objects, faces, and scenes). The underlying mechanisms are discussed on the basis of behavioral, neurophysiological, and computational evidence.

PSYC 4665 Executive Functioning (4 Credits)

This course provides an overview of current research, theories, and methods in the study of executive function and cognitive control. We will explore executive function from an interdisciplinary perspective, drawing on work from cognitive psychology and neuroscience, clinical neuropsychology, and developmental and educational psychology. Topics include the brain basis of executive function and cognitive control, the unity and diversity of executive functions, the development of executive functions, emotion and motivation as modulating influences on executive control, executive function in psychopathology, the role of individual differences, and links between executive function performance and higher-order behavioral outcomes. Enrollment restricted to Ph.D. program or with instructor approval.

PSYC 4688 Clinical Psychopharmacology (4 Credits)

This course offers an in-depth examination of medications used to treat mental disorders, including the neurobiology of these medications. Different options available for each disorder will be discussed, along with issues related to the effective use of psychiatric medications. Prerequisites: Instructor approval required.

PSYC 4700 Artificial Intelligence and Psychological Science: Exploring Human-Computer Interactions (4 Credits)

This seminar explores the intersections of artificial intelligence, human-computer interaction, psychology, and neuroscience with a focus on how AI technologies—such as generative AI, conversational agents, and social robots—shape and are shaped by human cognition, social behavior, development, and cultural context. Students will critically analyze research on AI's impact on social relationships, child development, cognition, brain function, and mental health. Students will engage in discussions that bridge psychological theory with AI technology. Topics include emotional and social connections with robots, cultural influences on AI interaction, ethical and safety concerns, and the neurocognitive implications of AI in our daily lives. This course aims to provide an understanding of AI's role in human psychological processes and its impacts on our functions across various domains, including education, health care, and social relationships.

PSYC 4920 Ethics in Psychological Research & Practice (2 Credits)

Ethical issues on psychological research. Teaching, practice.

PSYC 4925 Clinical Ethics and Professional Issues in Psychology (2 Credits)

Ethical topics related to clinical psychology; professional topics in clinical psychology such as supervision and consultation. Instructor permission required.

PSYC 4928 Initial Clinical Practicum (0 Credits)

Applied clinical training in psychology focused on assessment and therapy, primarily during trainee's first year of training at the Center for Child and Family Psychology. May be repeated up to 5 times. Prerequisite: Admission to doctoral program.

PSYC 4929 Advanced Clinical Practicum (0 Credits)

Applied clinical training in psychology focused on assessment and therapy, primarily during trainee's second year of training at the Center for Child and Family Psychology. May be repeated up to 5 times. Prerequisite: Admission to doctoral program.

PSYC 4930 Psychology Practicum-Clinical (1-5 Credits)

On-the-job training in clinical psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4931 Psychology Practicum-Teaching (0-5 Credits)

On-the-job training in teaching psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4932 Psychology Practicum-Research (1-5 Credits)

On-the-job training in research psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4933 Psychology Practicum - Advanced Clinical (0 Credits)

Advanced on-the-job training in clinical psychology. May be repeated up to 6 times. Prerequisite: Admission to doctoral program.

PSYC 4934 Practicum: DCN Neuropsychology (1-10 Credits)**PSYC 5991 Masters Independent Study (1-10 Credits)****PSYC 5995 Independent Research (1-10 Credits)****PSYC 6981 APA Internship (8 Credits)**

1 Year APA approved Internship in clinical psychology - the course is not graded.

PSYC 6991 Ph.D Independent Study (1-10 Credits)**PSYC 6995 Independent Research (1-10 Credits)****Courses****PSYC 3020 Adolescence (4 Credits)**

This course examines development during the adolescent years exploring biological, cognitive, and social transitions central to this developmental stage. It considers key contexts in which adolescents develop: families, peer groups, schools, work, leisure, and the mass media. Special attention is given to the importance of diverse social and cultural experiences and its impact on adolescent behavior and cognition. Prerequisites: PSYC2070 and PSYC3050, must be major or minor in psychology, must have junior or senior standing.

PSYC 3029 Imaging the Mind (4 Credits)

Imaging the Mind is an introductory course to the basic theory and data analysis techniques used in functional magnetic resonance imaging (fMRI). It will cover basic brain anatomy, the basic physics of MRI, experimental design, data processing and the issues associated with data processing, and interpretation of fMRI data. Students in this course will receive hands-on experience in processing a data set from start to finish. They will apply different image preprocessing techniques, statistical design parameters, and statistical models to determine how these factors influence the outcome of the data and how these factors influence the interpretation of that data. In this manner, each student will be exposed individually to the decision issues and interpretation pitfalls involved in fMRI data analysis. Cross listed with PSYC 4255. Prerequisites: PSYC 2031 and PSYC 3050, must be major or minor in psychology, must have junior standing. Permission of the instructor required.

PSYC 3032 Introduction to Neural Networks (4 Credits)

Introduction to basic principles and computational methods in artificial neural network modeling; neural models of cognitive and psychological processes examined and evaluated. Cross listed with PSYC 4254. Prerequisite: PSYC 1001 and PSYC 3050. Must be major or minor in psychology. Must have junior standing. Permission of instructor required.

PSYC 3035 Seminar: Cognitive Neuroscience (2 Credits)

This seminar is for students in the cognitive neuroscience specialization, a joint program with Biological Sciences. The goal of the seminar is to provide an opportunity for senior-level cognitive neuroscience majors to apply the knowledge and skills they have acquired in other courses to current cutting-edge topics in the field. Prerequisites: PSYC 2031 and PSYC 3050, must have cognitive neuroscience concentration, must have senior standing.

PSYC 3151 Senior Honors Research Seminar (1-5 Credits)

In conjunction with senior research thesis. Prerequisites: PSYC 2750, PSYC 2751 and PSYC 2752.

PSYC 3152 Senior Honors Research Seminar (1-5 Credits)

In conjunction with senior research thesis. Prerequisites: PSYC 2751 and PSYC 2752.

PSYC 3350 Cultural Psychology (4 Credits)

This seminar examines how people's sociocultural context shapes their thoughts, feelings, and behaviors. To approach this question, we read and discuss classic as well as recent theoretical and empirical articles from the field of cultural psychology. Topics include defining culture; dimensions of cultural variation; culture-biology interactions; methodological considerations; cultural influences on cognition, emotion, the self, moral judgment, and health; cultural neuroscience; cultural approaches to race and ethnicity; and mechanisms of cultural influence. Throughout, this course emphasizes sociocultural diversity in psychological processes. Students are encouraged to develop empirically tractable ways of asking and answering questions relating to cultural psychology and to apply concepts of cultural psychology to their own research. Prerequisite: PSYC 2740 and PSYC 3050; must be a major or minor in psychology, must have junior standing.

PSYC 3666 Brain Development & Cognition (4 Credits)

Examines what the brain tells us about development and what development tells us about the brain. Topics include subcortical and cortical developments to the acquisition of language and drawing. Prerequisites: PSYC 2070 and PSYC 3050; must be major or minor in psychology, must have junior standing.

PSYC 3700 Artificial Intelligence and Psychological Science: Exploring Human-Computer Interactions (4 Credits)

This seminar explores the intersections of artificial intelligence, human-computer interaction, psychology, and neuroscience with a focus on how AI technologies—such as generative AI, conversational agents, and social robots—shape and are shaped by human cognition, social behavior, development, and cultural context. Students will critically analyze research on AI's impact on social relationships, child development, cognition, brain function, and mental health. Students will engage in discussions that bridge psychological theory with AI technology. Topics include emotional and social connections with robots, cultural influences on AI interaction, ethical and safety concerns, and the neurocognitive implications of AI in our daily lives. This course aims to provide an understanding of AI's role in human psychological processes and its impacts on our functions across various domains, including education, health care, and social relationships.

PSYC 3701 Topics in Psychology (1-4 Credits)

Prerequisites: PSYC 1001 and PSYC 3050; must be major or minor in psychology, must have junior standing.

PSYC 3991 Independent Study (1-10 Credits)

Maximum of 5 hours per quarter not to exceed a total of 10 quarter hours.

PSYC 4002 Prosem in Memory and Cognition (4 Credits)

Theory/research on thinking, problem solving, language, creative thought, other aspects of knowing process.

PSYC 4011 Proseminar in Emotion (4 Credits)

Social/physiological aspects of emotions, including motivation, physiological processes, basic emotions, cognitive appraisal, cross-cultural issues, empathy, effects of emotions.

PSYC 4015 Nonverbal Behavior (4 Credits)

This course will be cross-listed with Psyc 3015 (undergraduate students in 3015 and graduate students in 4015 will be seated in the same classroom but will have different requirements). Most humans speak for a very small portion of their day (by most estimates, an hour or less) but during every waking moment of your life, you display nonverbal behaviors. These behaviors include facial expressions, eye gaze, posture, head movements, movement toward and away from things, gestures, distance from other people, vocal intonation, and many other subtle bodily actions. In this class, we will survey an enormous scientific literature regarding the causes and consequences of nonverbal behaviors. Our focus will be on nonverbal behavior in humans, but we will also review the role of nonverbal behavior in the social life of human and non-human animals alike. Topics include, but are not limited to questions such as: What methods should scientists use to examine the causes and consequences of nonverbal behavior? Do nonverbal behaviors reveal emotions and other psychological states or do nonverbal behaviors instead function for the purpose of social influence? What is the role of nonverbal behavior in deception and the detection of deception? Do people non-consciously process the social meaning of others' nonverbal behaviors?.

PSYC 4020 Proseminar in Personality (4 Credits)

Personality structure/dynamics, theory and findings, interrelationships between personality and socio-cultural determinants of behavior.

PSYC 4021 Prosem in Social Psychology (4 Credits)

Major theoretical issues and empirical research in social psychology; topics include cultural, social structure, cognitive consistency, social neuroscience, social cognition, person perception, the self, social influence, attitudes, relationships, emotion, coping.

PSYC 4025 Intergroup Relations (4 Credits)

This course is intended to provide a foundation in understanding how individuals and groups relate to each other within a social structure. Social groups can take many forms, ranging from classic social groups (e.g., race, gender, ethnicity, religion, sexual orientation) to minimal groups where membership is arbitrary. This course will explore foundational principles in classic and contemporary research on intergroup relations.

PSYC 4028 Social Cognition (4 Credits)

Social cognition describes how people make sense of themselves and others. The emphasis on "how" is important—social cognition research focuses on perceptual, cognitive, and affective processes that help people think about themselves and others. You will learn about the theories, findings, and methods in a specific area of study.

PSYC 4032 Developmental Proseminar: Social-Emotional (4 Credits)

Problems/theories in developmental psychology including Piagetian theory, language, emotional, perceptual, personality development, learning, biological bases of behavior, genetic influences.

PSYC 4033 Devel Proseminar: Biological (4 Credits)

This course provides an overview of major biological processes during development and their effects on physical, cognitive, and social development. Specific topics will include: history, concepts, and central themes of developmental psychology; theoretical and biological models of human development (e.g., developmental psychobiological systems view); brain development and plasticity; behavioral genetics; sleep and circadian rhythms; sexual differentiation and hormonal influences on behavior; stress and the HPA axis; effects of nutrition and toxic substances.

PSYC 4045 Proseminar in Human Brain Development (4 Credits)

This course offers an overview of current research and methodologies in the field of developmental cognitive, affective, and social neuroscience. It explores the insights that the brain provides about development and, conversely, what development reveals about the brain. Topics covered include sensitive periods for neuroplasticity, pediatric neuroimaging techniques, and the development of cognitive, affective, and social processes, as well as the impact of environmental factors. Emphasis is placed on discussing current research, evaluating findings, and proposing new research ideas in the field. Prerequisite: Instructor permission.

PSYC 4055 The Neuroscience and Psychology of Parenthood and Parent-Child Relationships (4 Credits)

This course explores the theory, research and issues relevant to parenthood and parent-child relationships. The course overviews the evolutionary, neurobiological, and psychological perspective of parent-child relationships with a focus on the understanding of recent advances in neuroscience research. Topics include neuroplasticity of parental brain, maternal vs. paternal biology for parenting, and social and biological determinants of parent-child relationships. Emphasis is placed on discussion of current research, evaluation of the findings, and proposals and ideas of new research in the field. The goal is not to memorize facts but rather to learn to think like a developmental cognitive/social neuroscientist. Cross-listed with course PSYC 3055. Prerequisite: Instructor permission.

PSYC 4081 Racism in Psychology (4 Credits)

Racism in Psychology will explore ways individual and systemic racism embedded within psychology shapes research, pedagogy, clinical practice and policy.

PSYC 4085 Stress & Health (4 Credits)

This course will serve as an introduction to the field of psychoneuroimmunology, with a focus on stress and development. The first section of the course will review basic immunology including immune system components and functions, and relations between the immune system and other systems. The later portion of the course will focus on effects of stress for different disease mechanisms (infection, allergy, cancer etc). Instructor approval required.

PSYC 4235 Teaching Psychology (1-5 Credits)

Experiential approach to learning techniques for teaching psychology.

PSYC 4240 Neurodiversity Affirming Assessment and Intervention (4 Credits)

This is a cross-listed course with both a graduate section and an undergraduate section. The primary goal of this course is to teach undergraduate students about neurodiversity across the lifespan by examining the assessment practices for diagnosis and examining the research on the evidence-based interventions. The course will discuss neurodiversity generally; however, when discussing assessment and intervention practices, the course will focus on practices specific to autism spectrum disorder. For graduate students, the course will cover these same topics with an additional goal of providing graduate students in the Clinical Child Psychology Ph.D. program with deeper knowledge of how to assess and conduct evidence-based practices with neurodiverse clients themselves. For both undergraduate and graduate students, course instruction will involve a combination of didactic reading, guided practice (i.e., role-play) and case presentations/case examples. For graduate students in the Clinical Psychology Ph.D. program, course instruction will also include supervised experience conducting evidence-based assessment and/or interventions for neurodiverse clients who present to the Center for Child and Family Psychology for diagnosis or treatment.

PSYC 4241 Seminar-Discourse Processes (4 Credits)**PSYC 4254 Intro to Neural Network Models (4 Credits)**

Cross listed with PSYC 3032.

PSYC 4255 Imaging the Mind (4 Credits)

Imaging Cognition is an introductory course to the basic theory and data analysis techniques used in functional magnetic resonance imaging (fMRI). It will cover basic brain anatomy, the basic physics of MRI, experimental design, data processing and the issues associated with data processing, and interpretation of fMRI data. Students in this course will receive hands-on experience in processing a data set from start to finish. They will apply different image preprocessing techniques, statistical design parameters, and statistical models to determine how these factors influence the outcome of the data and how these factors influence the interpretation of that data. In this manner, each student will be exposed individually to the decision issues and interpretation pitfalls involved in fMRI data analysis. Cross listed with PSYC 3029.

PSYC 4256 Seminar:Cognitive Neuroscience (4 Credits)

Neural systems underlying human perception, memory, language, pathological syndromes that result from damage to these systems.

PSYC 4257 Psychophysics & Neuroscience Lab (4 Credits)**PSYC 4258 Social Neuroscience (4 Credits)****PSYC 4262 Affective Neuroscience (4 Credits)**

Affective neuroscience is the study of emotions in the brain. In this course, we explore how new frontiers in emotion research, from brain scans to psychoactive drugs to monkey colonies, have changed the way we think about emotions and moods. We aim to learn how scientists ask these new questions: how and what can we learn about emotion from animal models, patient studies, genetic studies, brain scans, and drugs? We learn and debate different theories about what emotions are: when are emotions helpful and harmful? Why do we have them? How many are there? Can we control how we feel? Finally, we learn how to think about emotions scientifically: What kind of evidence matters? How do emotion scholars talk about their work? What kind of questions can we ask, and what kind can we hope to answer?.

PSYC 4295 Research Design & Inference (4 Credits)**PSYC 4300 Correlation and Regression (4 Credits)**

The course reviews the logic of statistical inference before introducing the procedures of correlation and regression. We begin with simple bivariate relationships before moving on to multivariate relationships for both categorical and continuous independent variables. Topics in regression include multicollinearity, variable selection, and curvilinear relationships. The course emphasizes the (stringent) requirements needed to be able to interpret correlational data in terms of cause and effect. The course also emphasizes the assessment of interactions in regression analysis for both categorical and continuous independent variables. Also included is basic coverage of logistic regression and regression assumptions. Prerequisite: PSYC 4295.

PSYC 4305 Psychology of Inequality (4 Credits)

In this course, we examine economic inequality through a psychological lens. First, we explore current trends in economic inequality and discuss how people perceive and evaluate these disparities. Then, we dive into research about why inequality persists, examining common beliefs about fairness, justice, and motivation, social structures that entrench disparities, and prejudices about marginalized groups. We will also explore the wide-ranging consequences of inequality on politics, health, emotions, decision-making and behavior.

PSYC 4330 Analysis of Variance (4 Credits)

Complex analysis of variance, other quantitative methodologies. Prerequisite: PSYC 4300 or instructor's permission.

PSYC 4350 Structural Equation Modeling for the Social Sciences (4 Credits)

This advanced course covers the basics of structural equation modeling and how this flexible approach to statistical analysis can be applied in the social sciences. Specific techniques that will be covered will include testing for mediation, path analysis, confirmatory factor analysis, and the analysis of longitudinal data, as well as other related topics. There will be an emphasis on applying these techniques to students' own research through hands-on demonstrations and homework assignments and an emphasis on interpreting and critiquing structural equation models in published research. A course on correlational methods and regression is a pre/co-requisite.

PSYC 4355 Multilevel Modeling for the Psychological Sciences: Theory and Applications (4 Credits)

This advanced course covers the basics of multilevel (hierarchical) linear modeling and how this flexible approach to statistical analysis can be applied to theory and data in the psychological sciences. Specific techniques that will be covered include the analysis of nested data, family and dyadic data, and longitudinal data as well as mediation and moderation. There will be an emphasis on applying these techniques to students' own research through hands-on demonstrations and homework assignments. There will also be an emphasis on interpreting and critiquing multilevel modeling analyses in published research. Courses on analysis of variance as well as correlational methods and regression are pre/corequisites.

PSYC 4360 Programming Psychology: Experiment Building with Python (4 Credits)

This graduate-level course provides an introduction to computer programming. The goal of the course is to help psychology students develop practical coding skills in Python that will allow them to design and create complex, computer-based experiments. Students will also learn to analyze and plot data. No previous experience with programming is required (or expected). The course begins with an introduction to basic principles of programming with Python. From there, students learn to code by solving challenges specific to the design/construction of a psychological/vision-based experiment. The class is highly interactive—each class includes a mixture of lecture, group-based problem solving, and coding in teams or individually. This class is highly recommended for students who wish to improve their programming proficiency before enrolling in PSYC 4365, although it is not a prerequisite.

PSYC 4365 Programming Psychology: Model-Fitting and Analysis (4 Credits)

An introduction to creating, fitting, and performing statistical inference using computational models with an emphasis on binary choice data. The aims of this course include familiarizing students with the mathematical basis of model-fitting, learning the value of taking a variety of approaches to fitting trial-by-trial data, and giving students practical hands-on experience with maximum likelihood fitting methods. This course will use both MATLAB and R. Though not a prerequisite, this course is intended to follow Programming Psychology: Experiment Building in MATLAB (PSYC 4360), and so will assume students already have a basic knowledge of coding in MATLAB (including debugging, scripts, functions, loops, and plotting). This course is open to graduate students outside of the Department of Psychology.

PSYC 4411 Assessment-Cognition (4 Credits)

This course will provide students with a graduate level overview of theory, research, and practice in the measurement of cognitive functioning. Students will gain practical skills in administering standardized measures of cognitive and academic functioning. They will also develop skills in interpreting cognitive test results and recognizing patterns in cognitive profiles related to specific learning and developmental disorders.

PSYC 4413 Assessment-Psychopathology (Social, Emotional, and Behavioral) (4 Credits)

Overview of evidence-based psychological assessment (emotional, behavioral, and social) with a focus on integrating theory, research, and clinical practice.

PSYC 4512 Prosem in Psychopathology (4 Credits)**PSYC 4518 Readings in Family Therapy (4 Credits)**

This course will survey major historical and contemporary theories from the field of family therapy. Basic family therapy techniques will be covered, and integrated with other modes of therapy (e.g. individual, marital). In the second half of the course, students will work with families and receive group supervision.

PSYC 4525 Prosem in Develop Neuropsych (4 Credits)

We will cover the theory and measurement of brain-behavior relations across the lifespan in several major neuropsychological domains, including executive functions, language, memory, and visual-spatial function. As is characteristic of the developmental neuropsychological field, students will learn to integrate information across multiple levels of analysis (genetic, brain, cognitive, behavioral) and draw on principles of neural and cognitive development in their application of neuropsychological theory to research and clinical issues. We will discuss current controversies in the field and continued areas for growth.

PSYC 4526 Prosem in Cog Neuroscience (4 Credits)

This is a graduate-level introduction to cognitive neuroscience. It covers basic theories of cognition and their neurological support.

PSYC 4565 Systems of Psychotherapy (4 Credits)

The course provides an introduction to evidence-based treatment for children and adolescents. Conceptual and empirical underpinnings of youth therapies are examined. Treatments for three prominent child and adolescent disorders - disruptive behavior problems, depression, and anxiety disorders - are highlighted. Demonstration and practice of specific treatment components is included.

PSYC 4566 Systems of Psychotherapy II (4 Credits)

Conceptual/empirical foundations of interventions for clinical problems, including (but not limited to) parasuicidality, Borderline Personality Disorder, and substance abuse.

PSYC 4571 Multicult Issues & Ment Health (4 Credits)

Theory, research, and practice issues related to the mental health of racial/ethnic minority and other diverse groups.

PSYC 4587 Workshop in Marital Therapy (4 Credits)**PSYC 4612 Marital Conflict (1-10 Credits)****PSYC 4620 Advan in Couples Intervention (4 Credits)****PSYC 4625 Couple Therapy with Diverse Populations (4 Credits)**

This is a cross-listed course with both a graduate section and an undergraduate section. The primary goal of this course is to teach undergraduate students about the field of couple therapy, the different therapeutic approaches in evidence-based couple therapy and research on couple therapy and couple-focused interventions. For graduate students, the course covers these same topics with an additional goal of providing graduate students in the Clinical Psychology Ph.D. program how to conduct evidence-based couple therapy in practice. For both undergraduate and graduate students, course instruction involves a combination of didactic reading, guided practice (i.e., role-play) and case presentations / case example. For graduate students in the Clinical Psychology Ph.D. program, course instruction also includes supervised experience conducting evidence-based couple therapy with couples who present to the Center for Child and Family Psychology for treatment of relationship distress, co-morbid chronic health conditions and relationship distress, or relationship enhancement.

PSYC 4660 Perception: A Cognitive Neuroscience Approach (4 Credits)

An introduction to human perception with a strong emphasis on visual perception. This course evaluates the current understanding of how neural activity in the brain allows people to perceive basic sensory features (e.g., brightness, color, size, position, depth, movement, loudness and pitch) as well as recognize and discriminate complex perceptual patterns (e.g., 2D-shapes, 3D-objects, faces, and scenes). The underlying mechanisms are discussed on the basis of behavioral, neurophysiological, and computational evidence.

PSYC 4665 Executive Functioning (4 Credits)

This course provides an overview of current research, theories, and methods in the study of executive function and cognitive control. We will explore executive function from an interdisciplinary perspective, drawing on work from cognitive psychology and neuroscience, clinical neuropsychology, and developmental and educational psychology. Topics include the brain basis of executive function and cognitive control, the unity and diversity of executive functions, the development of executive functions, emotion and motivation as modulating influences on executive control, executive function in psychopathology, the role of individual differences, and links between executive function performance and higher-order behavioral outcomes. Enrollment restricted to Ph.D. program or with instructor approval.

PSYC 4688 Clinical Psychopharmacology (4 Credits)

This course offers an in-depth examination of medications used to treat mental disorders, including the neurobiology of these medications. Different options available for each disorder will be discussed, along with issues related to the effective use of psychiatric medications. Prerequisites: Instructor approval required.

PSYC 4700 Artificial Intelligence and Psychological Science: Exploring Human-Computer Interactions (4 Credits)

This seminar explores the intersections of artificial intelligence, human-computer interaction, psychology, and neuroscience with a focus on how AI technologies—such as generative AI, conversational agents, and social robots—shape and are shaped by human cognition, social behavior, development, and cultural context. Students will critically analyze research on AI's impact on social relationships, child development, cognition, brain function, and mental health. Students will engage in discussions that bridge psychological theory with AI technology. Topics include emotional and social connections with robots, cultural influences on AI interaction, ethical and safety concerns, and the neurocognitive implications of AI in our daily lives. This course aims to provide an understanding of AI's role in human psychological processes and its impacts on our functions across various domains, including education, health care, and social relationships.

PSYC 4920 Ethics in Psychological Research & Practice (2 Credits)

Ethical issues on psychological research. Teaching, practice.

PSYC 4925 Clinical Ethics and Professional Issues in Psychology (2 Credits)

Ethical topics related to clinical psychology; professional topics in clinical psychology such as supervision and consultation. Instructor permission required.

PSYC 4928 Initial Clinical Practicum (0 Credits)

Applied clinical training in psychology focused on assessment and therapy, primarily during trainee's first year of training at the Center for Child and Family Psychology. May be repeated up to 5 times. Prerequisite: Admission to doctoral program.

PSYC 4929 Advanced Clinical Practicum (0 Credits)

Applied clinical training in psychology focused on assessment and therapy, primarily during trainee's second year of training at the Center for Child and Family Psychology. May be repeated up to 5 times. Prerequisite: Admission to doctoral program.

PSYC 4930 Psychology Practicum-Clinical (1-5 Credits)

On-the-job training in clinical psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4931 Psychology Practicum-Teaching (0-5 Credits)

On-the-job training in teaching psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4932 Psychology Practicum-Research (1-5 Credits)

On-the-job training in research psychology. May be repeated for a maximum of 24 quarter hours. Prerequisite: Admission to doctoral program.

PSYC 4933 Psychology Practicum - Advanced Clinical (0 Credits)

Advanced on-the-job training in clinical psychology. May be repeated up to 6 times. Prerequisite: Admission to doctoral program.

PSYC 4934 Practicum: DCN Neuropsychology (1-10 Credits)

PSYC 5991 Masters Independent Study (1-10 Credits)

PSYC 5995 Independent Research (1-10 Credits)

PSYC 6981 APA Internship (8 Credits)

1 Year APA approved Internship in clinical psychology - the course is not graded.

PSYC 6991 Ph.D Independent Study (1-10 Credits)

PSYC 6995 Independent Research (1-10 Credits)