

# NEUROSCIENCE MAJOR CHECKLIST

EFFECTIVE JULY 2024

**PLEASE NOTE:** (P) INDICATES PREREQUISITES REQUIRED PRIOR TO ENROLLING IN A GIVEN COURSE. OR SEE WEBSITES BELOW:

BIOLOGICAL SCIENCES: [HTTPS://UWM.EDU/BIOLOGY/UNDERGRADUATE/COURSES/](https://uwm.edu/biology/undergraduate/courses/)

CHEMISTRY: [HTTPS://UWM.EDU/CHEMISTRY/UNDERGRADUATE/COURSES/](https://uwm.edu/chemistry/undergraduate/courses/)

PHYSICS: [HTTPS://UWM.EDU/PHYSICS/UNDERGRADUATE/COURSES/](https://uwm.edu/physics/undergraduate/courses/)

PSYCHOLOGY: [HTTPS://UWM.EDU/PSYCHOLOGY/UNDERGRADUATE/CURRICULUM-AND-COURSES/](https://uwm.edu/psychology/undergraduate/curriculum-and-courses/)

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## REQUIRED PREPARATORY COURSES

These courses provide foundations in Chemistry and Physics needed for the required Neuroscience coursework

- \_\_\_ **CHEM 102 – General Chemistry** – 5 credits (P: 1 on Chem Placement test & Math Placement Level 30 or a satisfactory grade in any math course  $\geq$  Math 105 or 108; or min grade C in Chem 100(P))
  - \_\_\_ **CHEM 104 – General Chemistry and Quantitative Analysis** – 5 credits (P: C or better in Chem 102(P))
  - \_\_\_ **CHEM 343 – Organic Chemistry** – 3 credits (P: C or better in Chem 104(P))
  - \_\_\_ **CHEM 345 – Organic Chemistry** – 3 credits (P: C or better in Chem 343(P); conc reg Chem 344(R))
  - \_\_\_ **PHYSICS 120 – General Physics I** – 4 credits (P: Math Placement Level 30 or C or better in Physics 100(P); HS trig or Physics 100 strongly recom)
  - \_\_\_ **PHYSICS 122 – General Physics II** – 4 credits (P: Physics 120(NP)) OR
    - \_\_\_ **PHYSICS 209 – Physics I (Calculus Treatment)** – 4 credits (P: Math 227(C), 228(C), or 232(C)) **AND**
    - \_\_\_ **PHYSICS 210 – Physics II (Calculus Treatment)** – 4 credits (P: C- or better in Physics 209(NP); Math 229(C) or 233(C))
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## REQUIRED COURSES FOR ALL NEUROSCIENCE MAJORS

These courses provide a foundation in the major domains of Biological Sciences, Psychology, and Neuroscience.

- \_\_\_ **BIO SCI 150 – Foundation of Biological Sciences I** – 4 credits (P: Chem 100(P) or 102(P) or conc reg)
  - \_\_\_ **BIO SCI 152 – Foundation of Biological Sciences II** – 4 credits (P: C or better in BIO SCI 150(P))
  - \_\_\_ **BIO SCI 315 – Cell Biology** – 3 credits (P: C or better in Bio Sci 152(P) & Chem 104(P))
  - \_\_\_ **BIO SCI 455 – Cellular, Molecular and Developmental Neurobiology** – 3 credits (P: jr st; C or better in Bio Sci 315(P))
  - \_\_\_ **PSY 101 - Introduction to Psychology** – 3 credits (P: none)
  - \_\_\_ **PSY 254 - Physiological Psychology** – 3 credits (P: PSY 101(P))
  - \_\_\_ **One Course in Statistics from the Alternatives Below:**
    - \_\_\_ **BIOSCI 465 – Biostatistics** – 3 credits (jr st; Bio Sci 150(P); Math 105(P))
    - \_\_\_ **MTHSTAT 215 – Elementary Statistical Analysis** – 3 credits (satisfaction of GER Quantitative Literacy Part A)
    - \_\_\_ **PSY 210 – Psychological Statistics** – 4 credits (P: Psych 101(P); satisfaction of GER Quant Lit Part A)
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## REQUIRED RESEARCH EXPERIENCE: SELECT 1 COURSE BELOW

These courses provide hands-on experience in Neuroscience research conducted in faculty research labs.

- \_\_\_ **BIO SCI 672 – Undergraduate Seminar in Cell & Molecular Biology** – 1 credit (P: sr st; Bio Sci 315(P) & 316(P))
- \_\_\_ **BIO SCI 697 – Independ. Study in Cell & Molec. Biology** – 1-3 credits (P: jr st; Bio Sci 315(P) & 316(P); 2.5 gpa; consent)
- \_\_\_ **BIO SCI 699 – Independent Study** – 1-3 credits (P: jr st; Bio Sci 325(260)(P); 310(P) or 315(P) & 316(P); 2.5 gpa; consent)
- \_\_\_ **NEURO 690 – Undergraduate Research in Neuroscience** – 3 credits (P: Bio Sci 150&152(P); Psych 101&254(P); Program director consent)
- \_\_\_ **NEURO 697 – Independent Study** – 1-3 credits (P: jr st; 2.0 GPA, consent of instructor, Program director, Asst Dean of Student Success and Academic Services)

\_\_\_ **PSY 654 – Advanced Physiological Psychology** – 4 credits (*P: jr st; Psych 254(P) & 325(P)*)

\_\_\_ **PSY 656 – Psychophysiology** – 4 credits (*P: jr st; Psych 254(R) & 325(P)*)

\_\_\_ **PSY 690 – Undergraduate Research in Psychology: Upper Division** – 1-3 credits (*P: jr st; sponsorship by faculty member*)

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**ELECTIVE COURSES:** COMPLETE 11 CREDITS FROM ANY OF THE FOLLOWING (SEE WEBSITES LISTED ABOVE FOR DETAILED PREREQUISITES).

**BIOLOGICAL SCIENCES** (prerequisites listed are Bio Sci courses unless otherwise indicated)

\_\_\_ BIO SCI 203 – Anat & Physiol (*4 cr, P: 202 or 315*)

\_\_\_ BIO SCI 290 – Independ Study & Res (*1-3 cr, P: 2.5 gpa; consent*)

\_\_\_ BIO SCI 316 – Lab in Genetics & Cell Biol (*2 cr, P: 152 & Chem 104, Bio 315 or 325*)

\_\_\_ BIO SCI 325 – Genetics (*4 cr, P: 150; 152 or 203; Chem 104*)

\_\_\_ BIO SCI 356 – Developmental Biology (*3 cr, P: 315 or 325*)

\_\_\_ BIO SCI 370 – Mammalian Physiology (*3 cr, P: 315*)

\_\_\_ BIO SCI 469 – Genomics Data Analysis (*2 cr, P: jr st; 325 & 465*)

\_\_\_ BIO SCI 490 – Molecular Genetics (*3 cr, P: Jr st, 325; 315 & 316*)

\_\_\_ BIO SCI 539 – Lab Tech in Molec Biol (*4 cr, P: jr st, 315 or 325*)

\_\_\_ BIO SCI 542 – Electron Microscopy (*3 cr, P: Jr st, 315 & 316*)

\_\_\_ BIO SCI 543 – Scanning Electron Microscopy Lab (*2 cr, P: Jr st; 542 & consent*)

\_\_\_ BIO SCI 544 – Transmission Electron Micro Lab (*2 cr, P: Jr st, 542, consent*)

\_\_\_ BIO SCI 564 – Endocrinology (*3 cr, P: Jr st, 315, Chem 103/341/343*)

\_\_\_ BIO SCI 565 – Gene Regulation (*3 cr, P: Jr st, 315 or 325*)

\_\_\_ BIO SCI 566 – Cell Biol of Human Disease (*3 cr, P: Jr st, 315*)

\_\_\_ BIO SCI 572 – Functional Genomics (*3 cr, P: Jr st, 325*)

\_\_\_ BIO SCI 672 – Undergrad Sem in Cell & Mol (*1 cr, P: Sr st, 383*)

\_\_\_ BIO SCI 697 – Independ Study in Cell & Mol (*1-3 cr, P: jr st; 315 & 316; 2.5 gpa; consent*)

**PSYCHOLOGY** (prerequisites listed are Psych courses)

\_\_\_ PSY 214 – Intro to Conditioning and Learning (*3 cr, P: 101*)

\_\_\_ PSY 290 – Undergrad Res in Psy: Lower (*1-3 cr, P: Fr, so st, 101*)

\_\_\_ PSY 325 – Research Methods (*4 cr, P: 101, 210*)

\_\_\_ PSY 433 – Neuropsychology (*3 cr, P: 254, or consent*)

\_\_\_ PSY 454 – Psychopharm. & Addiction (*3 cr, P: 254, or consent*)

\_\_\_ PSY 503 – Perception (*3 cr, P: Jr st, 9 cr in psych*)

\_\_\_ PSY 510 – Advanced Psych Statistics (*3 cr, P: Jr st, 210*)

\_\_\_ PSY 514 – Conditioning and Learning (*4 cr, P: Jr st, 325*)

\_\_\_ PSY 551 – Learning & Motivation (*3 cr, P: Jr st, 9 cr in psych*)

\_\_\_ PSY 610 – Experimental Design (*3 cr, P: Jr st, 210*)

\_\_\_ PSY 611 – Current Topics: (subtitled) (*3 cr, P: Jr st*)

\_\_\_ PSY 623 – Perceptual Processes (*4 cr, P: Jr st, 325*)

\_\_\_ PSY 627 – Cognitive Neurosci (*3 cr, P: Jr st, 210, 254*)

\_\_\_ PSY 630 – Cell. & Molec. Neurosci (*3 cr, P: Jr st, 254*)

\_\_\_ PSY 645 – Hormones & Behavior (*3 cr, P: Jr st, 254*)

\_\_\_ PSY 654 – Advanced Physiol Psych (*4 cr, P: Jr st, 254, 325*)

\_\_\_ PSY 656 – Psychophysiology (*4 cr, P: Jr st, 254, 325*)

\_\_\_ PSY 657 – Neurobio of Learning/Memory (*3 cr, P: Jr st*)

\_\_\_ PSY 682 – The Aging Brain (*3 cr, P: Jr st, 254*)

**OTHER**

\_\_\_ BMS 610 – Pharmacology (*3 cr, P: Jr st, Chem 501, or consent*)

\_\_\_ CHEM 501 – Biochemistry (*3 cr, P: Jr st, C or better in Chem 341 or 345*)

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**DECLARATION OF MAJOR**

\_\_\_ Complete the Declaration of Major form online if you did not select Neuroscience as your major when you applied to UWM. When your declaration is processed, the neuroscience major Co-directors, Dr. Karyn Frick (Psychology) and Dr. Christopher Quinn (Biological Sciences), will be added as your advisors for the major.

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**ADDITIONAL GRADUATION REQUIREMENTS FOR NEUROSCIENCE MAJORS**

\_\_\_ Complete all required courses (23-24 credits), one required research experience (1-4 credits), and at least 11 credits from the list of elective courses.

\_\_\_ You must have an average GPA of at least 2.0 in all courses in the major, including courses taken at UWM and, if a transfer student, courses taken at UWM plus transfer courses.

- \_\_\_\_\_ L&S STUDENTS: Meet with an L&S Advisor (<http://uwm.edu/letters-science/advising/student-advising>) to be sure that you are meeting the L&S and university-wide requirements for graduation. These requirements are available at <http://uwm.edu/letters-science/advising/degree-requirements>. Make sure to speak with your advisor about the degree requirements for a B.S.
  - \_\_\_\_\_ ALL STUDENTS: Meet with an advisor from your home college to be sure you are on track for timely graduation!
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