NEUROSCIENCE MAJOR CHECKLIST

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/
CHEMISTRY: HTTPS://UWM.EDU/CHEMISTRY/UNDERGRADUATE/COURSES/
PHYSICS: HTTPS://UWM.EDU/PHYSICS/UNDERGRADUATE/COURSES/
PSYCHOLOGY: HTTPS://UWM.EDU/PSYCHOLOGY/UNDERGRADUATE/CURRICULUM-AND-COURSES/

REQUIRED PREPARATORY COURSES (24 CREDITS)
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 > 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) OR
   ___ PHYSICS 209 – Physics I (Calculus Treatment) – 4 credits (P: Math 227(C), 228(C), or 232(C))
___ PHYSICS 122 – General Physics II – 4 credits (P: Physics 120(NP)) OR
   ___ PHYSICS 210 – Physics II (Calculus Treatment) – 4 credits (P: C- or better in Physics 209(NP); Math 229(C) or 233(C))

REQUIRED COURSES FOR ALL NEUROSCIENCE MAJORS (27-28 CREDITS)
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)

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)
___ PSY 654 – Advanced Physiological Psychology – 4 credits (P: jr st; Psych 254(P) & 325(P))
___ PSY 656 – Psychophysics – 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)
**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 in Stem Cells and Regeneration (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 psyche)
- 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 psyche)
- PSY 516 – Behavioral Neurosci (3 cr, P: Jr st, 325)
- 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 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 BIO SCI 150 and PSYCH 101 with grades of C or better in each.
- Choose one of the neuroscience major Co-directors, Dr. Karyn Frick (Psychology) or Dr. Ava Udvadia (Biological Sciences), to serve as your advisor for the major.
- Complete the Declaration of Major form online.

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**GRADUATION REQUIREMENTS FOR NEUROSCIENCE MAJORS**

- Complete all preparatory courses (24 credits)
- Complete all required courses (27-28 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](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](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!