

Neuroscience Advising

Welcome to Washington State University and the Neuroscience Program. Congratulations on becoming a Cougar! I hope you have a wonderful experience here at WSU. I would like to share some information with you to get you started down the right path.

Neuroscience is the study of the brain and the nervous system. The Neuroscience major at WSU is an interdisciplinary and interdepartmental biomedical degree program combining many traditional fields of study including biology, psychology, chemistry, physics, anatomy, pharmacology, physiology, engineering, mathematics, and computer science. The brain is the most complex living structure in the universe; the extent of its capabilities is unknown. This single organ controls all body activities, ranging from heart rate and sexual function to emotion, learning, and memory. The brain is even thought to influence the immune system's response to disease and to determine, in part, how well people respond to medical treatments. Ultimately, it shapes our thoughts, hopes, dreams, and imaginations. In short, the brain is what makes us human.

Students who major in Neuroscience are preparing for careers in research or biotechnology; or professional careers in medicine, veterinary medicine, dentistry, optometry, pharmacy, or allied health careers (such as nursing, physical therapy, genetic counseling, physician's assistant, or EMT).

As your academic advisor, I am here to assist you by connecting you with campus resources, discussing career options, discussing academic problems, providing referral to other resources on campus as appropriate (such as tutoring or the Access Center), and overall, helping you learn how to be successful at WSU. I can also help you with the application process to Graduate School or Professional School (Letters of Recommendation, Professional Goals Statement, etc.). In addition, I work with the Pre-Health Science Advising Office to offer mock interviews, practice interviewing, determine your strengths and weaknesses, and offer resume tips.

I strongly encourage you to make an appointment with me soon after the first week of school to discuss your personal and academic career goals. Advising is a valuable resource, and you should take the time to use it to your advantage.

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NEUROSCIENCE PROGRAM ADVISING SYLLABUS

GETTING THE MOST FROM ACADEMIC ADVISING

- ***Your Responsibilities***
 - Schedule regular appointments. Call or email as soon as possible if you need to change or cancel an appointment.
 - ◆ October – schedule advising appointment for priority registration for Spring
 - ◆ March – schedule advising appointment for priority registration for Fall and Summer Session
 - ◆ Other appointments as needed – see your advisor BEFORE it's too late!
 - Gather all relevant decision-making information and necessary materials (Degree Audit/SSAD, tentative course selections, forms, etc.) to aid in decision making and to build a schedule free of conflicts.
 - Prepare a list of questions or concerns before meeting with your Advisor. Continue to ask questions until you understand.
 - Become knowledgeable about WSU's policies, procedures, and requirements.
 - Keep a personal record of your progress toward your academic goals. Be proactive in checking the electronic resources (especially myWSU) to keep track of your academic progress.
 - Clarify personal values and goals and provide your Advisor with accurate and truthful information regarding your interests and abilities.
 - Accept responsibility for your decisions and your actions that affect your educational progress and goals.
- ***Our Responsibilities***
 - Understand and effectively communicate the curriculum, graduation requirements, and University and College policies and procedures.
 - Assist students in exploring their educational options.
 - Encourage and guide students as they define and develop realistic goals.
 - Encourage and support students with information about and strategies for utilizing the available resources and services on campus and in the community.
 - Assist students in understanding the purposes and goals of higher education and its effects on their lives and personal goals.
 - Be accessible for meeting with advisees during office hours.
 - Assist students in decision-making skills and in assuming responsibility for their educational plans and achievements.
 - Maintain confidentiality.
- ***Additional Reasons To See Your Advisor:***
 - Discuss any problems that affect academic performance, including academic progress, certification and course selection.
 - Add or drop courses or to take a course "PASS-FAIL" or "AUDIT".
 - Discuss concerns about inadequate study skills, difficulties in your course work, or are on Academic Probation. Find out where help is available.
 - Discuss Study Abroad plans
 - Discuss career considerations, changing directions/major/interests.
 - Declare a major ("*Certification of Major*").

The Neuroscience program website can be found at: <http://ipn.vetmed.wsu.edu/neuroscience/undergraduate>

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NOTE: Policies set forth in this Neuroscience Handbook are effective only for students in the Neuroscience Degree Program. In addition, students must meet all WSU requirements to graduate. For an exception or change to a policy set forth in the Neuroscience Handbook, please contact the Neuroscience Program at 509-335-6624. Any changes or clarifications in this manual should be directed to Neuroscience Program at 509-335-6624, Department of IPN, Washington State University, Pullman, WA 99164-7620, Phone 509-335-6624. V:\Neuroscience\Recruitment\Undergraduate\Handbook\UG Handbook 16-17.doc. Published 08/2016.

INTRODUCTION TO THE NEUROSCIENCE PROGRAM AT WSU

The Program in Neuroscience at Washington State University offers the Bachelor of Science (B.S.) Degree, and the Graduate Program in Neuroscience offers the Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) Degrees. The breadth of the program is demonstrated by the program's multi-disciplinary curriculum and faculty, including nationally and internationally noted scholars, representing all areas of Neuroscience.

CAREER OPPORTUNITIES IN NEUROSCIENCE

For many students, one of the hardest questions to answer is, "What do you want to be when you grow up?" In choosing your career and in picking your major, what should you do? One approach would be to simply relax, find something you like doing now, major in it in college and get a job. Then be on the lookout for new opportunities. Take them when they arise and enjoy life. That would be a completely valid approach. Another approach would be to do some research on different career possibilities so that you can see what is out there. There are thousands of jobs that you have never even heard of before, and one of them might be perfect for you. One way to learn about them is to start asking every adult you know, "What do you do for a living?" and then "Do you like it, and why?" Another is to start plowing through books and material on the web.

If you have a strong interest in the biological sciences, Neuroscience might be the career path you are searching for. The Neuroscience Program provides an interdisciplinary and interdepartmental biomedical curriculum in the study of the brain and nervous system. Neuroscience combines many traditional fields of study, including: biology, psychology, chemistry, physics, anatomy, pharmacology, physiology, engineering, mathematics, and computer science. The brain is the most remarkable phenomenon in the biological universe, controlling who we are and all that we do – from the regulation of the body's every function to the execution of complex thoughts and emotions. The Bachelor of Science Degree in Neuroscience at WSU will provide you with a broad spectrum of curricular experience encompassing all aspects of the brain and nervous system.

Students graduating with a degree in Neuroscience will typically advance to professional programs such as medical, veterinary, dental or Graduate School. However, a Bachelor's Degree also prepares students to enter the rapidly growing biotechnology and pharmaceutical industries where much research is devoted to neurodegenerative diseases such as Alzheimer's, Parkinson's, AIDS, Dementia, and Multiple Sclerosis, to name a few. In addition, the following careers are just a few of the opportunities open to neuroscience graduates (some careers may require more training):

- Professional Schools
 - Physician
 - Nurse Practitioner
 - Dentist
 - Pharmacist
 - Optometrist
 - Veterinarian
 - Physical Therapist
 - Physician's Assistant
 - Radiologist
 - Nurse
 - Public Health
- Graduate School
- Research
- BioEngineering
- Forensic Science
- Education (K-12, College, Trade)
- Animal Care Technician
- Genetic Counseling
- Nutrition/Dietitian
- Supply Sales (Vet/Medical/Pharmaceutical)
- Medical Lab Technician
- Diagnostic Lab Technician
- Biomedical Facilities/Hospital Staff
- Psychology/Mental Health
- Technology Transfer
- Stock Market
- Emergency Medical Technician (EMT)/Paramedic
- Food Safety Inspection
- Marketing Biomedical Companies/Products/Business Side of Science
- Journalist/Technical Science Writing/ Editing
- Scientific Illustration
- Patent Law/Patent Agent
- Peace Corps
- Non-profit administration
- Government (National Institutes of Health, National Science Foundation, Food and Drug Administration, EPA, FBI, Armed Forces, etc.)

NEW STUDENTS

Students who are entering Washington State University (WSU) for the first time and have a desire to major in Neuroscience are assigned to the Neuroscience advisor during Alive! If you do not know who your Advisor is, contact the Neuroscience Program at 509-335-6624 or neuromajor@wsu.edu.

TRANSFER STUDENTS

Many of WSU's transfer students began their studies at Washington, Oregon, or other states' community colleges. Students who earn an approved transfer A.A. or A.S. degree at a Washington community college generally transfer to WSU with Junior standing and with their basic general education course requirements (UCORE) fulfilled via a Direct Transfer Agreement (D.T.A.). Students pursuing a 4-year degree in a science-related field may transfer to WSU with an Associate of Science Transfer (A.S.T.) degree. This degree is science- and math-based and only **a portion of the lower division UCORE requirements are satisfied**. Visit the Transfer Credit web site at <http://transfercredit.wsu.edu> to see how courses transfer to WSU from your community college.

Each transfer student's file should contain a "Transfer Credit Report" (TCR) which details how credits and coursework transferred. The TCR is generated by the Office of Admissions which evaluates the University's general education requirements (UCORE). If a student has completed a "Transferable Associate Degree", this will be noted on the left side column at the top of the TCR. This notation means that all UCORE courses have been completed, regardless of what is listed on the right-hand side of the sheet. Please note that a transferable degree **does not automatically fulfill the Neuroscience program requirements**; specifically: the introductory biology, chemistry, physics and mathematics may need to be completed at WSU – check with your Neuroscience Advisor. You can also see your transfer credit report on myWSU.

Students are encouraged to work with the Neuroscience Advisor to plan a transfer program that incorporates the prerequisites for certification to the program. Neurosci 301 or Neurosci 302 must be taken prior to certifying. Transferable courses meeting the Neuroscience major requirements must transfer with a GPA of 3.0 or better to be applied toward the major. Washington community college students should also become familiar with WSU's *Transfer Guide* for that community college. Students who hold a degree from a community college in another state or a degree other than the approved transfer degree will be granted credit on a course-by-course basis.

All transfer students who have been accepted to WSU as a pre-Neuroscience major, certified Neuroscience major, or returning Neuroscience major, will be assigned to an Advisor in the Neuroscience Program.

*NOTE: Students may **NOT** receive credit toward graduation if they repeat a course at WSU for which they have already received transfer credit from another institution.*

AP or IB CREDIT / RUNNING START CREDIT**ADVANCED PLACEMENT / INTERNATIONAL BACCALAUREATE**

Washington State University grants credits in a variety of subject areas for students who have scored 3 or higher on some College Board Advanced Placement (AP) or 4 or higher on International Baccalaureate (IB) examinations. A table of AP and IB exams and the minimum scores for which WSU credit is awarded can be found at: <https://transfercredit.wsu.edu/types-of-credit/credit-by-exam/>

Students interested in pursuing a career in medicine, dentistry or veterinary medicine should note that *many professional schools do not accept AP or IB credit in fulfillment of their entrance requirements*. For example, if you took AP Calculus in high school and passed with a grade of “3” or better, you would not be required to take an additional math class at WSU in order to fulfill the requirements for graduation. However, when you apply to Professional School, that institution *may not accept your AP credit* as evidence that you successfully completed a college level calculus course. Therefore, always check with your Advisor regarding AP and/or IB credits earned.

RUNNING START / COLLEGE IN THE HIGH SCHOOL

Washington State University supports Washington’s Running Start Program, which allows students to take courses for both high school and college credit. If you wish to apply these credits toward a degree at WSU, you should have an official transcript of your college-level work (from the college or university, not your high school) sent to the WSU Office of Admissions. If you have participated in a similar program (not Running Start) through your high school, please have the college or university send your transcripts to be evaluated for credit at WSU.

REQUEST FOR STATEMENTS VERIFYING STUDENT WORK

The Office of the Registrar provides the service of verifying student academic work. There is no charge for this service.

SELF-SERVICE ENROLLMENT VERIFICATION FOR CURRENT AND PAST TERMS:

(<http://registrar.wsu.edu/official-statement-request/>)

Students needing to verify their enrollment status (full-time, half-time, or less than half-time) for the current or past term should use the self-service link above. You may print an enrollment verification or check loan information when you logon to the National Clearinghouse web site. You may also call the Clearinghouse at (703) 742-7791.

Students needing to verify their enrollment for a future term, or needing to verify specific enrollment information other than full-time, half-time, or less than half-time status (specific number of hours enrolled, grade point average, degree earned, etc.) should visit the URL listed above. At your request, the Office of the Registrar will prepare a letter, signed by the Registrar, that can be used to verify various aspects of a student's academic work here at WSU. Please print the form from your browser, fill it out, and mail or fax it to the Registrar’s Office.

STUDENT RESPONSIBILITY FOR GRADUATION – RULE 108

The student has the ultimate responsibility for meeting all graduation requirements. The student plans the program of study each semester in consultation with the advisor. The degree requirements listed in the catalog and in the advisement report are binding. Colleges may substitute or waive college-level requirements for individual students. Departments may substitute or waive departmental requirements for individual students.

ADVISING

You are encouraged to meet with your Advisor on a regular basis (See page 1 for your advisor's contact information). The most successful students meet with their advisors more than once per semester and seek their advisor's advice before problems become too difficult to correct. Email your advisor to make an appointment.

NEUROSCIENCE ADVISING E-MAIL LISTSERV

The Neuroscience Program has established an e-mail list-service to aid advising and scholarship or internship searches. Please email your advisor to be added to the list. The name of the Neuroscience advising listserv is **undergraduate_neuroscience**, so be sure to check that emails from the listserv are not landing in your spam or clutter folders.

CHANGING ADVISORS – NON-CERTIFIED STUDENTS

Non-certified students who wish to change advisors need to contact the Academic Success and Career Center (ASCC) in Lighty Student Services Building or the advisor for the program they wish to join.

CHANGING ADVISORS – CERTIFIED MAJORS

Certified Majors who wish to change their major should contact their academic advisor. Since the purpose of this is to change certified majors, students transferring from another major into the Neuroscience Program will need to meet the certification requirements before making the transition. Students who have not yet met the certification requirements will become advisees of the Neuroscience Program but will not be certified until the requirements have been met.

ADD / DROPS

Students may add classes (using myWSU) through the end of the first week of classes. After this time, students must obtain the instructor's approval either by signature on an "Add/Drop" form from the Program turned in at the Registrar's Office, French Ad Building/Room 346, or by a request through your Neuroscience Advisor. Classes may be dropped (using myWSU) through the 30th day of the semester. After this time, students may withdraw from courses (using myWSU) through the 13th week of instruction with a grade of "W" (lifetime limit of four withdrawals). A \$5 service fee is charged to the student's account for all withdrawals after the 30th day of classes.

The Fall, Spring, and Summer academic calendars may be viewed at: <http://registrar.wsu.edu/academic-calendar/> for all terms. Please refer to this calendar for add/drop dates, tuition payment dates, last day to withdraw from a course, final examination week, etc.

WSU COURSE WITHDRAWAL POLICY

Note: The text below are summaries. Full details of all of the WSU academic regulations maybe viewed at:
<http://registrar.wsu.edu/academic-regulations/>

- ❖ **Rule #67:** Within 30 days of the start of each semester, students may drop a course without record.
- ❖ **Rule #68:** At the end of each term, the number of withdrawals will be counted for undergraduate and professional students. Once four withdrawals have been used, no further withdrawals will be allowed in subsequent terms.
- ❖ **Rule #72:** Students who have not attended class the first week may be dropped from class.

INCOMPLETES

- ❖ **Rule #90:** “I”. The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. Students have one (1) full year to complete the work required for a grade change.

COURSE REPEAT POLICY

- ❖ **Rule #34:** Students may ONLY repeat a course in which they have received a grade of “C-” or below, a withdrawal (“W”), or when a course may be repeated for additional credit. Students may only repeat a course graded C- or below one (1) time at WSU during Fall or Spring semesters.

Repeating courses graded C- or below. To attempt to improve the cumulative grade point average, a student may repeat courses in which a C- or below was received. When such a course is repeated, only the last grade contributes to the grade point average and total hours earned. Students may repeat a course graded C- or below one time at WSU. Additional repeats are allowed at WSU only by special permission of the academic unit offering the course. Repeats are allowed as transfer credit from another institution. However, the series of repeats and grades is retained on the student’s academic record.

- Only courses identified as acceptable equivalents according to the appropriate department, the *Transfer Guide*, or the Admissions Office are treated as repeats. If courses deemed equivalent in content differ in credit hours, the credit hours of the repeated course supersede the credit hours of the original course.
- Once a student has graduated from WSU, repeated courses cannot change the pre-degree transcript.
- If a course has been repeated once already, or is being repeated with special permission after a grade of C or better, the course will not count as units toward full-time status for the purposes of financial aid if it is taken again.

CURRICULUM APPEALS AND PETITIONS

To petition or appeal changes or substitutions in the curriculum, or to request special consideration for certification, follow the instructions below:

PETITIONING THE NEUROSCIENCE PROGRAM

1. Write a Letter of Petition that clearly states the nature of your petition or request. For example, it is your responsibility to request that a specific course taken at another institution be substituted for a specific course at WSU that is part of the Neuroscience curriculum. (*NOTE: The Neuroscience Program will only consider petitions for substitutions of courses required by the Neuroscience Program. The program does not approve UCORE required courses, unless the course is needed to satisfy a Neuroscience Program requirement. Approval of a UCORE course for the Neuroscience Program does not indicate the course has been approved to satisfy a University UCORE requirement.*)
2. If the materials you provide are intended to support your petition to substitute a specific course from another institution (foreign or domestic) for a required or elective course in Neuroscience at WSU, then please provide complete information on the course content of the substituted course. This would include the following:
 - a. Course title of transferred/substituted course,
 - b. Course number/title of WSU course,
 - c. Name of the textbook(s) used in substituted course and course syllabus,
 - d. Method used to test knowledge of materials covered,
 - e. Provide information demonstrating that the content and learning from the transfer course really substitutes for one of ours (i.e., graded coursework, test grades, final grades, etc.).
3. Address your Petition Letter to the Neuroscience Undergraduate Curriculum Committee, in care of your Advisor, Campus Zip 7620.
4. Make sure you include your name, WSU ID, mailing address, e-mail address, and local phone number on the Petition.
5. Date and sign the Petition.

The Curriculum Committee will respond to your request within three (3) weeks from receipt of your Petition.

ADDITIONAL PETITION OPTIONS

Students may petition graduation requirements through the WSU Registrar's Office. Students must complete the appropriate form, which can be found in the Office of Graduations/Undergraduate Degrees, French Ad/Room 346, (509) 335-7724.

Students who would like to petition the University to accept transfer courses in substitution for non-neuroscience WSU courses must contact the Academic Success and Career Center, Lighty Student Services Building, (509) 335-6000.

Petition forms require the following information:

- Copies of all your transcripts
- Copies of all your transfer credit reports
- Official course description and syllabi for substitutions.

The petition forms must be signed by the student's Academic Advisor, Department Chair, and Academic Dean. Students will receive written notification once a decision has been made.

UNIVERSITY COMMON REQUIREMENTS FOR NEUROSCIENCE MAJORS

Washington State University's general education curriculum, called the **University Common Requirements (UCORE)**, applies to all students who enter WSU Fall 2013 and after. *Continuing students must refer to the requirements detailed in prior catalogs under the General Education Requirement section. Honors students complete the Honors College version of the general education curriculum outlined in the Honors section of this catalog.*

Students are required to take a minimum of 34 credit hours distributed among the categories listed below.

- **FIRST-YEAR EXPERIENCE**
Roots of Contemporary Issues [ROOT], 3
- **FOUNDATIONAL COMPETENCIES**
Quantitative Reasoning [QUAN], 3
Written Communication [WRTG], 3
Communication or Written Communication [COMM] or [WRTG], 3
- **WAYS OF KNOWING**
Inquiry in the Social Sciences [SSCI], 3
Inquiry in the Humanities [HUM], 3
Inquiry in the Creative and Professional Arts [ARTS], 3
Inquiry in the Natural Sciences¹ [BSCI] [PSCI] [SCI], 7
- **INTEGRATIVE AND APPLIED LEARNING**
Diversity [DIVR], 3
Integrative Capstone [CAPS], 3

¹At least 3 hours in Biological Science and 3 hours in Physical Science plus 1 additional lab hour are required.

Total Required Semester Credit Hours: 34 credits

SPECIAL NOTE FOR TRANSFER STUDENTS

Students who have completed an approved Associates of Arts (A.A.) Degree at a Washington or Oregon community college are generally considered to have fulfilled the lower-division UCORE requirements. These students will still be responsible for meeting the other requirements for graduation, including those in the college and major departments. The “*University Writing Portfolio*” and the upper-division capstone [CAPS] course are not lower-division requirements and, therefore, cannot be satisfied by the approved associate degrees. Transfer students who have completed an Associate of Science Transfer degree (AS-T, track I or II) may have additional courses to complete. Please check your Transfer Credit Report and academic requirements in myWSU and ask your advisor if you are unsure of your remaining requirements. In general, for transfer students entering under WSU:

IF YOU HAVE:

An approved, transferable Associate of Arts (**DTA**)

An approved, transferable Associate of Science (**AST**)

No approved transferable degree

YOU NEED:

Integrative Capstone [CAPS]

Roots of Contemporary Issues [ROOT]
3 credits [COMM] or [WRTG]
Diversity [DIVR]
Integrative Capstone [CAPS]

all UCORE except course-by-course
matches of transferred coursework

OTHER WSU REQUIREMENTS FOR NEUROSCIENCE MAJORS

WRITING PROFICIENCY

WSU Faculty, Administration, and Regents have identified **writing proficiency** as a priority at WSU. Accordingly, all students will satisfy specified requirements to meet WSU's writing proficiency standards for graduation. The requirements are outlined below. For additional information, contact the Writing Center in CUE, 4th Floor, or at 509-335-7959.

1. Placement in Freshman Writing Courses

- a. All students must satisfy the Communication Proficiency requirement by passing six (6) credits of written and oral communication courses, including at least three (3) in written communication [W], and three (3) of either [W] or [C]).
- b. Prior to enrollment in freshman writing courses, all students must take a "**Writing Placement Examination**" for the purpose of placement in appropriate writing courses. These placements are mandatory. The only exception to this is for students who have scored a 4 or 5 on either the English Language and Composition AP exam or the English Literature and Composition AP exam. The *Writing Placement Examination* is administered during Summer Alive! New Student Orientation, at the beginning of the Fall semester, and prior to Spring registration. Examination results will place students in one of the following required categories:

- English 100 (3) [W] *Basic Writing*
- English 101 (3) [W] [WRTG] *Introductory Writing*
- English 101 (3) [W] [WRTG] *Introductory Writing* and English 102 (1) *Writing Tutorial*
- English 101 *exemption* (credit will be given for English 101)
- English 105 (3) [W] [WRTG] *Composition for ESL Students*
- English 105 (3) [W] [WRTG] *Composition for ESL Students* and English 107 (1) *Writing Tutorial for ESL Students*
- English 298 (3) [W] [WRTG] *Honors Writing and Research*

2. The University Writing Portfolio (Junior Writing Portfolio) – Writing Assessment at Mid-Career

Successful performance on the University's "*Junior Writing Portfolio*" is a requirement for graduation at WSU. *Junior Writing Portfolio* packets can be purchased from the Student Book Corporation (Bookie). Students may satisfy this requirement at any time between completing the English 101 requirement (or equivalent) and earning their 61st credit. Completing the *Junior Portfolio* involves two activities:

- a. Submitting three (3) original, graded papers from previously assigned class work (e.g., lab report, case study, essay, research, summary, essay exam, etc.)
- b. Successful performance on the timed and proctored writing exercises.

Students must complete at least one of the two parts of the portfolio no later than the end of the first semester of upper-division standing (upon accumulating 60 credits). Freshmen and Sophomores may take the timed writing exam any time after successfully completing English 101.

Transfer students may bring papers from previously attended schools. Transfer students may elect to postpone the *Portfolio* until they have completed at least one (1) semester of work at WSU.

The *Writing Portfolio* must be completed before a student enrolls in a course that satisfies the “*WRITING-IN-THE-MAJOR*” requirement ([M] course).

Students who are unsuccessful in passing the *University Writing Portfolio* may re-take the exam after completing work to prepare for repeating the exam. (For example, a tutorial program in the WSU Writing Lab or successful completion of a writing course.)

3. Writing-in-the-Major [M]

Two (2) courses identified as *WRITING-IN-THE-MAJOR* [M] (**Neurosci 403 and 430**) must be included in course work taken to meet departmental requirements for graduation. Students must complete the *Junior Writing Portfolio* before enrolling in an [M] course, therefore, Neuroscience students must satisfy this requirement before enrolling in Neurosci 403 or 430. “Submit” means that the student must turn in the three (3) writing samples and complete the timed writing (see above). If a student enrolls in either class before s/he submits the *Portfolio*, the student will be dis-enrolled.

Before the first day of Neurosci 403 or Neurosci 430, the student must be able to prove completion of this requirement. Therefore, the student should plan on completing the *Junior Writing Portfolio* as early as possible.

If the student receives a “Needs Work” rating (requiring either 1, 2, or 3 credits), the Neuroscience Department VERY STRONGLY recommends that the student complete the “Needs Work” requirement BEFORE the first day of Neurosci 403 or Neurosci 430. If the student is unable to do so BEFORE the first day of class, the student may enroll in his/her required workshop and Neurosci 403/430 concurrently (at the same time). However, the student SHOULD NOT plan on taking the required workshop AFTER completing Neurosci 403 or 430.

CERTIFYING A MAJOR IN NEUROSCIENCE

To certify a major in Neuroscience, students must complete a minimum of 24 credit hours and have a cumulative 3.0 or better GPA in the following math and science courses:

- **3.0 minimum GPA in the following:**
 - Biology 106 and 107
 - Chem 105 and 106 (or 115/116)
 - Math 140 or 171
 - Physics 101 (or 201 or 205)
 - Physics 102 (or 202 or 206) –OR– Chem 345
 - Neurosci 301 or 302

The Neuroscience Baccalaureate Degree Program currently has a cap of 40 majors per class. Thus, we may be unable to certify all qualified students. In this situation, the most highly qualified students who apply will be selected for certification up to the enrollment limit.

Students who have certified must continue to maintain the 3.0 minimum GPA overall and in all courses required to fulfill the degree requirements or they may be de-certified from the major and their folders returned to the Academic Success and Career Center (ASCC) for reassignment.

CERTIFYING YOUR NEUROSCIENCE MAJOR

Students wanting to certify into the Neuroscience Program should go to: <http://ipn.vetmed.wsu.edu/neuroscience/undergraduate> and fill out the Application for Certification that is appropriate for their intended option.

Students who apply for certification into the Neuroscience Program and are denied may appeal the decision via a letter of petition to the Program Director within 30 days of notification of the denial. The Program Director’s decision is final.

CERTIFYING A MINOR OR SECOND MAJOR

A student who has completed 60 semester hours and is certified in a major may certify a minor or second major with the approval of the department offering the minor or second major. The student should consult with the department concerning hours and grade point requirements and an approved schedule of studies to meet such requirements.

A second major requires completion of departmental requirements for the major.

A minor in Neuroscience requires a minimum of 16 semester credit hours – half of which must be in upper-division work. Upon completion of the requirements, the department will notify the Registrar's Office and the minor or second major will be posted on the student's permanent record (transcript). For more details, please see the Neuroscience Minor requirements on p. 66

To certify a Minor or a Second Major, ask your academic advisor to complete the "*Petition for Certifying a Second Major or a Minor*" form online.

CERTIFYING A SECOND DEGREE

One 4-year undergraduate degree requires a minimum of 120 semester hours. For each additional Bachelor's Degree, the student must complete an additional 30 semester hours and satisfy all requirements of the second degree program including additional UCORE courses required by the degree-granting college or program. A second [CAPS] course is not required to obtain the double degree.

DECERTIFICATION AND RECERTIFICATION

A certified major who becomes academically deficient under **Rules 38 or 39** and is decertified from the Neuroscience program will be eligible to recertify, when the cumulative and major grade point average are at or above 3.0.

A certified major who falls below the minimum departmental requirements may be decertified by the department after two (2) semesters of falling below that minimum. The department must notify the student at the end of the first semester and establish conditions in writing that must be met the second semester. If conditions are not met at the end of the second semester, documentation must be provided to the Academic Success and Career Center (ASCC) along with the request to decertify a student.

NEUROSCIENCE PROGRAM ACADEMIC DEFICIENCY

Some students run into academic difficulty due to circumstances within or outside their control. The Neuroscience Program Advisor is committed to assist in mitigating whatever is preventing performance at the level required to qualify for certification or to maintain certification in the major.

Students with a cumulative GPA below 3.0 must meet with their Advisor to formulate a plan that will maximize future chances at success. Such a plan might include, but is not limited to: getting tutoring assistance, a mid-term Advisor check, completion of seminars offered by ASCC (Academic Success and Career Center), and/or a letter documenting extenuating circumstances, if any exist. The advisor and student should both sign the individualized plan. Probation will end automatically if the student attains a GPA of 3.0 or higher in the following semester's required courses. The student will be considered back on track for certifying or maintaining certification in the major. If the plan is not followed and GPA remains below par, the student's academic records will be returned to the general ASCC advising pool and certified majors will be decertified. If the student follows the plan, yet is unable to raise his/her GPA, the academic folder will be reviewed by the Neuroscience Curriculum Committee, who will decide whether to retain the student's folder for another semester with another individualized strategic plan, or to transfer the record to ASCC. In the latter case, an academically deficient student would have a chance to appeal for return of his/her folder once grades are raised to qualification levels.

All courses required for the Neuroscience major must be completed with a grade of C or better in order to satisfy the requirements for graduation.

ACADEMIC DEFICIENCY

- ❖ **Rule #38:** (a) Undergraduate students whose semester (excluding summer session) or cumulative grade point average drops below a 2.0 for the first time must apply for reinstatement to continue their enrollment at Washington State University. Students are placed on probation after reinstatement. Certified majors on academic probation may be decertified by the academic department.
(b) First-time, first-year undergraduate students are recessed from the University after their first term of enrollment if their semester grade point average is below 1.0. Individuals are recessed from the university for one full semester (Fall or Spring). To reenroll for courses offered through any WSU campus students must apply for reinstatement. Recessed individuals may not seek status as a non-degree seeking student. Recessed students may enroll in summer session.
- ❖ **Rule #39:** Undergraduate students are dismissed from the University after the third semester (excluding summer session) in which the cumulative grade point average is below 2.0. Individuals who are dismissed from the university must wait a minimum of two full semesters (fall/spring, spring/fall) to reenroll for courses offered through any WSU campus. Dismissed individuals may not seek status as a 'non-degree seeking student.' Dismissed students may enroll in summer session.
- ❖ **Rule #40:** Former students may seek reinstatement after two semesters by completing the academic reinstatement process. Former students petitioning for academic reinstatement must, as part of the reinstatement petition process, provide documentation that demonstrates potential for academic success at WSU. If seeking reinstatement after more than two semesters, former students must also apply for readmission to the University through the Office of Admissions. All academic coursework from other institutions completed during dismissed status must be documented and official transcripts submitted to the Office of Admissions.
- ❖ **Rule #41:** An undergraduate student who has been reinstated after becoming deficient under Rule 38 or 39 will be on academic probation. The specific conditions of enrollment for students who are on official probation will be determined by the interviewer or Review Board. Students on probation who fail to comply with the conditions of their probationary enrollment will be dismissed from the University.

**NEUROSCIENCE MAJOR REQUIRED CURRICULUM
(GENERAL, PRE-MEDICAL/PRE-DENTAL, AND PRE-VETERINARY OPTIONS)***

- **Years 1 & 2**

- **CORE PRE-REQUISITES**

| PREFIX | COURSE NO. | UCORE | TITLE | HOURS |
|-------------------------------|---------------------------------|--------|---|-----------|
| Biology | 106 (L) AND | [BSCI] | Intro Biology – Organismal Biology | 4 |
| | 107 (L) | [BSCI] | Intro Biology – Cell Biology & Genetics | 4 |
| Chem | 105 (L) AND | [PSCI] | Principles of Chemistry | 4 |
| | 106 (L) OR | [PSCI] | Principles of Chemistry | 4 |
| | 115 (L) AND | [PSCI] | Honors Chemistry | 4 |
| | 116 (L) | [PSCI] | Honors Chemistry | 4 |
| Chem | 345 (L) ¹ | | Organic Chemistry I | 4 |
| Math | 140 OR | [QUAN] | Math for Life Science | 4 |
| | 171 | [QUAN] | Calculus I | 4 |
| Physics | 101 (L) ² AND | [PSCI] | General Physics | 4 |
| | 102 (L) ² | [PSCI] | General Physics | 4 |
| Psych | 105 | [SSCI] | Introduction to Psychology | 3 |
| YEARS 1 & 2 TOTAL: | | | | 35 |

(L) indicates laboratory hours required

¹ Chem 345 and 348 are both required for entrance into some medical, dental, pharmacy, and optometry schools

² Students with a full year of calculus may substitute Physics 201/202 **or** Physics 205/206 for Physics 101/102

- **Years 3 & 4**

- **MAJOR CORE COURSES**

| PREFIX | COURSE NO. | TITLE | HOURS |
|-------------------------------|-------------------|---|--------------|
| MBioS | 303 | Introductory Biochemistry | 4 |
| Neurosci | 301 OR 302 | Foundations of Neuroscience OR Honors Foundations of Neuroscience | 3 |
| Neurosci | 403 [M] | Cellular Neurobiology | 3 |
| Neurosci | 404 (L) | Neuroanatomy | 4 |
| Neurosci | 430 (L) [M] | Principles of Neurophysiology | 4 |
| Neurosci | 490 [CAPS] | Senior Project | 3 |
| Psych/Stat | 311/212 | Elementary Statistics in Psychology/ Intro. to Statistical Methods | 4 |
| <u>Select one (1):</u> | | | |
| Neurosci | 305 OR | Neurons, Genes, and Behavior | 3 |
| Neurosci | 333 (L) OR | Techniques and Experimental Design in Neuroscience Research | 4 |
| Neurosci | 409 OR | Affective Neuroscience: Foundations of Human & Animal Emotions | 3 |
| YEARS 3 & 4 TOTAL: | | | 28-29 |

* See p. 32 for Computational Neuroscience option requirements

▫ **MAJOR ELECTIVE COURSES – SELECT NINE (9) CREDITS**

| PREFIX | COURSE NO. | TITLE | HOURS |
|--|------------|---|----------|
| Biology | 315 | Gross & Microanatomy | 4 |
| Biology | 321 | Principles of Animal Development | 4 |
| Biology | 352 | Cell Physiology | 3 |
| Biology | 353 | Mammalian Physiology | 4 |
| Biology | 354 | Human Anatomy for Health Occupations (WSUV) | 4 |
| Biology | 438 | Animal Behavior | 3 |
| Biology | 456 | Neuroethology | 3 |
| MBioS/Biology | 301 | General Genetics | 4 |
| MBioS | 304 | Microbiology and Molecular Biology Laboratory | 3 |
| MBioS | 305 | General Microbiology | 3 |
| MBioS | 401 | Cell Biology | 3 |
| MBioS | 404 | Molecular Biology | 3 |
| MBioS | 413 | General Biochemistry | 3 |
| Neurosci | 305 | Neurons, Genes, and Behavior | 3 |
| Neurosci | 409 | Affective Neuroscience | 3 |
| Neurosci | 425 | Integrative Physiology | 3 |
| Neurosci | 426 | Integrative Physiology Laboratory (L) | 1 |
| Psych | 265 | Biopsychological Effects of Alcohol & Other Drugs | 3 |
| Psych | 312 | Experimental Methods in Psychology | 4 |
| Psych | 333 | Abnormal Psychology | 3 |
| Psych | 350 | Social Psychology | 3 |
| Psych | 361 | Principles of Developmental Psychology | 3 |
| Psych | 372 | Biological Basis of Behavior | 3 |
| Psych | 384 | Sensation & Perception | 3 |
| Psych | 464 | Behavior Disorders of Adolescents and Children | 3 |
| Psych | 470 | Motivation | 3 |
| Psych | 473 | Advanced Biological Basis of Behavior | 3 |
| Psych | 490 | Cognition and Memory | 3 |
| Psych | 491 | Principles of Learning | 3 |
| Physics | 466 | Biological Physics | 3 |
| Vet_Ph | 308 | Functional Anatomy of Domestic Animals | 4 |
| MAJOR ELECTIVE CREDITS (SELECT A TOTAL OF 9 CREDITS): | | | 9 |

- **Graduate Study by Seniors**

Seniors who have at least a 3.0 grade point average in the last half of their undergraduate coursework at WSU may register for up to six (6) semester hours of work in the Graduate School in excess of the number of hours required to complete the Bachelor’s Degree. Graduate School approval is required at the time of registration. Only grades of “B” or higher may be applied toward an advanced degree. Seniors who wish to enroll in 500-level courses for undergraduate credit must obtain the approval of their major advisor and the chair of the department or program in which the course is offered.

- **Other Elective Courses**

With approval of the Curriculum Committee, other courses may satisfy the electives above for some students.

| PREFIX | COURSE NO. | TITLE | HOURS |
|----------|------------|--|-------|
| Astronom | 450 | The Search for Extraterrestrial Life | 3 |
| Biology | 401 | Plants and People | 3 |
| CE | 401 | Global Climate Change | 3 |
| Cpt_S | 422 | Software Engineering Principles | 3 |
| Cpt_S | 423 | Software Design Project II | 3 |
| Cpt_S | 440 | Introduction to Artificial Intelligence | 3 |
| Cpt_S | 450 | Design & Analysis of Algorithms | 3 |
| E_E | 324 | Fundamentals of Digital Systems | 4 |
| E_E | 341 | Signals and Systems | 3 |
| E_E | 451 | Digital Communication Systems | 3 |
| E_E | 464 | Digital Signal Processing | 3 |
| Entom | 401 | Biology and Society, Past and Present | 3 |
| MBioS | 402 | General Genetics Laboratory | 3 |
| MBioS | 423 | Human Genetics | 3 |
| MBioS | 401 | Introduction to Cell Biology | 3 |
| MBioS | 454 | Techniques in Molecular Biology | 3 |
| MATSE | 440 | Materials: The Foundation of Society & Technology | 3 |
| Neurosci | 509 | Affective Neuroscience: Foundations of Human & Animal Emotions | 3 |
| Neurosci | 520 | Fundamentals of Neuroscience | 4 |
| Neurosci | 526 | Domestic & Exotic Animal Behavior | 2 |
| Neurosci | 529 | Integrative Neuroscience [U of I: Biol 529] | 3 |
| Neurosci | 540 | Special Topics: Integrative Neuroscience | 3 |
| Neurosci | 541 | Special Topics: Cellular & Molecular Neuroscience | 3 |
| Neurosci | 542 | Special Topics: Disciplinary Neuroscience | 3 |
| Neurosci | 543 | Special Topics: Behavioral/Clinical Neuroscience | 3 |
| Neurosci | 561 | Biological Signal Processing [U of I: Neuro 521] | 2 |
| Physics | 466 | Biological Physics | 3 |
| Psych | 584 | Sensory Bases of Behavior [U of I: Psych 568] | 3 |
| Women_St | 407 | Biology of Women | 3 |

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: GENERAL OPTION

B.S. CURRICULUM REQUIREMENTS – GENERAL OPTION (including ELECTIVES and UCORE)

UNIVERSITY COMMON REQUIREMENTS

- **First Year Experience [ROOT]**
{3 semester credits}
- History 105** 3 cr _____
- **Foundational Competencies:**
- Communication or Written Communication [COMM] [WRTG]
{6 semester credits; minimum of 3 must be Written [W]}
- English 101** [WRTG] 3 cr _____
- [WRTG] or [COMM] 3 cr _____
- Quantitative Reasoning [QUAN]
- Math 140 or 171** 4 cr _____
- **Ways of Knowing**
- Inquiry in the Social Sciences [SSCI]
{3 semester credits}
- Psych 105 [SSCI]** 3 cr _____
- Inquiry in the Humanities [HUM]
{3 semester credits}
- _____
- Inquiry in the Creative and Professional Arts [ARTS]
{3 semester credits}
- _____
- Inquiry in the Natural Sciences [BSCI] [PSCI]
{3 hours in Biological Science and 3 hours in
Physical Science plus 1 additional lab hour}
- Biology 106** [BSCI] (L) 4 cr _____
- Chem 105** [PSCI] (L) 4 cr _____
- Physics 101, 201**
or 205 [PSCI] (L) 4 cr _____
- **Integrative and Applied Learning**
- Diversity [DIVR]
{3 semester credits}
- _____
- Integrative Capstone [CAPS]
{3 semester credits minimum}
- Neurosci 490** [CAPS] _____

TOTAL 34 CREDITS

UPPER DIVISION REQUIREMENTS

- Junior Writing Portfolio _____
{Complete before taking Writing-in-the-Major courses}

FURTHER DEPARTMENTAL REQUIREMENTS

- **Biology 107** (L) 4 cr _____
- **Chem 106** (L) 4 cr _____
- **Chem 345** (L) 4 cr _____
- **MBioS 303** 4 cr _____
- **Neurosci 301 or 302** 3 cr _____
- **Neurosci 403** [M] 3 cr _____
- **Neurosci 404** (L) 4 cr _____
- **Neurosci 430** (L) [M] 4 cr _____
- **Physics 102** (L) or **202** (L) or
206 (L) 4 cr _____
- **Psych 311** or
Stat 212 or **Math/Stat 360** 4 cr _____
- **Neurosci 305**
or **Neurosci 333**
or **Neurosci 409** 3-4 cr _____

NINE (9) CREDITS FROM THE FOLLOWING

- **Biology 315** 4 cr _____
- **Biology 321** 4 cr _____
- **Biology 352** 3 cr _____
- **Biology 353** 4 cr _____
- **Biology 438** 3 cr _____
- **Biology 456** 3 cr _____
- **MBioS 301** 4 cr _____
- **MBioS 305** 3 cr _____
- **MBioS 401** 3 cr _____
- **MBioS 420** 3 cr _____
- **Neurosci 305** 3 cr _____
- **Neurosci 409** 3 cr _____
- **Neurosci 425/426** 3+1 cr _____
- **Neurosci 495/499*** 1-3 cr _____
- **Psych 265** 3 cr _____
- **Psych 312** 4 cr _____
- **Psych 372** 3 cr _____
- **Psych 384** 3 cr _____
- **Psych 470** 3 cr _____
- **Psych 473** 3 cr _____
- **Psych 490** 3 cr _____
- **Psych 491** 3 cr _____
- **Physics 466** 3 cr _____
- **Vet_Ph 308** 4 cr _____

* VARIABLE CREDIT 1-3 per semester; a maximum of 2 credits of Neurosci 495 or 499 may be applied to the major as elective credits, a maximum of 5 credits may be counted towards graduation; to receive credit toward the major, students must be a certified Neuroscience major

B.S. SUGGESTED SCHEDULE – GENERAL OPTION (UCORE)

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------------------------|-----------|--------|
| Math 106 | 3 | |
| Chem 105¹ (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Psych 105 | 3 | [SSCI] |
| Neurosci 138 | 1 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|------------------------------------|-----------|--------|
| Biology 107² (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| History 105 | 3 | [ROOT] |
| Math 108 | 2 | |
| Humanities | 3 | [HUM] |
| TOTAL | 16 | |

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
² Biology 106 requires an ALEKS score > 40% or previous college biology credit
 Biology 107 requires previous college credit or concurrent enrollment in Chem

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------------------|-----------|------------------|
| Biology 106² (L) | 4 | [BSCI] |
| Chem 345³ (L) | 4 | |
| Oral or written communications | 3 | [COMM] or [WRTG] |
| Math 140 or 171 | 4 | [QUAN] |
| TOTAL | 15 | |

| SPRING SEMESTER | HOURS | |
|------------------------|-----------|--------|
| Neurosci 301 | 3 | |
| Physics 101 (L) | 4 | [PSCI] |
| Diversity class | 3 | [DIVR] |
| Electives | 4 | |
| TOTAL | 14 | |

³ Chem 345 & 348 are required for entrance to some medical, dental, optometry, and pharmacy schools

- **Apply for Certification in Neuroscience**

JUNIOR

| FALL SEMESTER | HOURS | |
|------------------------------|-----------|--------|
| Behavior Course ⁴ | 3 | |
| Physics 102 (L) | 4 | [PSCI] |
| MBioS 303 | 4 | |
| Electives | 6 | |
| TOTAL | 16 | |

- **Complete UNIVERSITY JUNIOR WRITING PORTFOLIO**

| SPRING SEMESTER | HOURS | |
|----------------------------|-----------|--------|
| Electives | 4 | |
| Psych 311/ Stat 212 | 4 | |
| Neurosci 404 (L) | 4 | [M] |
| Fine Arts | 3 | [ARTS] |
| TOTAL | 15 | |

⁴ SELECT ONE: Neurosci 305 **or** 333 **or** 409

- **If applying to Graduate School, study for GRE and take exam before August 1st**

SENIOR

| FALL SEMESTER | HOURS | |
|-------------------------|-----------|-----|
| Neurosci 430 (L) | 4 | [M] |
| Electives | 11 | |
| TOTAL | 15 | |

- **If applying to Graduate School, apply by October 31st**

| SPRING SEMESTER | HOURS | |
|---------------------|-----------|--------|
| Neurosci 403 | 3 | [M] |
| Neurosci 490 | 3 | [CAPS] |
| Electives | 9 | |
| TOTAL | 15 | |

- **Minimum of 120 Credits**

(L) Denotes a class that is combined with a laboratory. Non-sequential courses may be taken in a different order. Students should check with their Advisor when planning their program. Complete *WRITING PORTFOLIO* before taking [M] courses.

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: GENERAL OPTION

B.S. CURRICULUM REQUIREMENTS – GENERAL OPTION (including PRE-PHARMACY ELECTIVES and UCORE)

UNIVERSITY COMMON REQUIREMENTS

- **First Year Experience [ROOT]**
{3 semester credits}
- History 105** 3 cr _____
- **Foundational Competencies:**
- Communication or Written Communication [COMM] [WRTG]
{6 semester credits; minimum of 3 must be Written [W]}
- English 101 [WRTG]** 3 cr _____
- English 402¹ [WRTG]** 3 cr _____
- Quantitative Reasoning [QUAN]
- Math 140 or 171** 4 cr _____
- **Ways of Knowing**
- Inquiry in the Social Sciences [SSCI]
{3 semester credits}
- Psych 105 [SSCI]** 3 cr _____
- EconS 101¹ [SSCI]** 3 cr _____
- Inquiry in the Humanities [HUM]
{3 semester credits}
- Phil 365¹ [HUM]** 3 cr _____
- Inquiry in the Creative and Professional Arts [ARTS]
{3 semester credits}
- _____
- Inquiry in the Natural Sciences [BSCI] [PSCI]
{3 hours in Biological Science and 3 hours in
plus 1 additional lab hour}
- Biology 106 [BSCI] (L)** 4 cr _____
- Chem 105 [PSCI] (L)** 4 cr _____
- Physics 101, 201
or 205 [PSCI] (L)** 4 cr _____
- **Integrative and Applied Learning**
- Diversity [DIVR]
{3 semester credits}
- _____
- Integrative Capstone [CAPS]
{3 semester credits minimum}
- Neurosci 490 [CAPS]** _____

TOTAL 34 CREDITS

¹ Required for Pharmacy School

UPPER DIVISION REQUIREMENTS

- Junior Writing Portfolio _____
{Complete before taking Writing-in-the-Major courses}

FURTHER DEPARTMENTAL REQUIREMENTS

- **Biology 107 (L)** 4 cr _____
- **Chem 106 (L)** 4 cr _____
- **Chem 345² (L)** 4 cr _____
- **Chem 348² (L)** 4 cr _____
- **MBioS 303** 4 cr _____
- **Neurosci 301 or 302** 3 cr _____
- **Neurosci 403 [M]** 3 cr _____
- **Neurosci 404 (L)** 4 cr _____
- **Neurosci 430 (L) [M]** 4 cr _____
- **Physics 102 (L) or 202 (L) or
206 (L)** 4 cr _____
- **Psych 311 or
Stat 212 or Math/Stat 360** 4 cr _____
- **Neurosci 305
or Neurosci 333
or Neurosci 409** 3-4 cr _____

² Chem 345 AND 348 are required for pharmacy school

ADDITIONAL PHARMACY REQUIREMENTS*

- **Biology/ MBioS 301** 4 cr _____
- **Biology 315** 4 cr _____
- **Biology 353 or Neurosci 425/426³** 4 cr _____
- **MBioS 305** 3 cr _____

³ Biology 352 is a prerequisite for Biology 353 and counts as a Neuroscience elective. Neurosci 425/426 may also be taken to fulfill this requirement for pharmacy school. See your advisor.

* WSU Neuroscience students with an interest in Pre-Pharmacy must meet with the WSU Pre-Pharmacy Advisor in the College of Sciences for advising on Pre-Pharmacy requirements. Each of the courses listed here counts towards the Neuroscience Elective requirement.

B.S. SUGGESTED SCHEDULE – GENERAL OPTION
(PRE-PHARMACY ELECTIVES) UCORE

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------------------|-----------|--------|
| Math 106 | 3 | |
| Chem 105 ¹ (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Psych 105 | 3 | [SSCI] |
| Neurosci 138 | 1 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|------------------------------|-----------|--------|
| Biology 107 ² (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| History 105 | 3 | [ROOT] |
| Math 108 | 2 | |
| Fine Arts | 3 | [ARTS] |
| TOTAL | 16 | |

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%

² Biology 106 requires an ALEKS score > 40% or previous college biology credit
Biology 107 requires previous college credit or concurrent enrollment in Chem

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------------|-----------|--------|
| Biology 106 ² (L) | 4 | [BSCI] |
| Math 140 or 171 (L) | 4 | [QUAN] |
| EconS 101 | 3 | [SSCI] |
| Diversity | 3 | [DIVR] |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Physics 101 (L) | 4 | [PSCI] |
| Chem 345 (L) | 4 | |
| Neurosci 301 | 3 | |
| Phil 365 | 3 | [HUM] |
| TOTAL | 14 | |

- Complete *WRITING PORTFOLIO*

³ Physics 201 or 205 (requires Math 171 with C or better or placed into Math 172)
Physics 202 or 206 (requires Math 172 with C or better or placement into Math 273)

⁴ SELECT ONE: Neurosci 305 or 333 or 409

JUNIOR

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| Biology/MBioS 301 | 4 |
| Chem 348 (L) | 4 |
| Behavior Course ⁴ | 3 |
| Physics 102 (L) | 4 |
| TOTAL | 15 |

| SPRING SEMESTER | HOURS |
|--------------------------|-----------|
| MBioS 303 | 4 |
| Psych 311 / Stat 212 (L) | 4 |
| Biol 315 (L) | 4 |
| Elective | 4 |
| TOTAL | 16 |

SENIOR

| FALL SEMESTER | HOURS | |
|------------------|-----------|--------|
| Neurosci 425 | 3 | |
| Neurosci 426 | 1 | |
| Neurosci 430 (L) | 4 | [M] |
| English 402 | 3 | [WRTG] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|------------------|-----------|--------|
| Neurosci 404 (L) | 4 | |
| Neurosci 403 | 3 | [M] |
| Neurosci 490 | 3 | [CAPS] |
| Electives | 4 | |
| TOTAL | 14 | |

- **Minimum of 120 Credits needed for degree**

WSU Neuroscience students with an interest in Pre-Pharmacy must meet with the WSU Pre-Pharmacy Advisor in the Pre-Health Advising Office for advising on Pre-Pharmacy requirements.

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: PRE-MEDICAL/PRE-DENTAL OPTION

B.S. CURRICULUM REQUIREMENTS – PRE-MEDICAL/PRE-DENTAL OPTION (including ELECTIVES and UCORE)

UNIVERSITY COMMON REQUIREMENTS

- **First Year Experience [ROOT]**
{3 semester credits}
History 105 3 cr _____
- **Foundational Competencies:**
Communication or Written Communication [COMM] [WRTG]
{6 semester credits; minimum of 3 must be Written [W]}
English 101 [WRTG] 3 cr _____
[WRTG] **or** [COMM] 3 cr _____
- Quantitative Reasoning [QUAN]
Math 140 or 171 4 cr _____
- **Ways of Knowing**
Inquiry in the Social Sciences [SSCI]
{3 semester credits}
Psych 105 [SSCI] 3 cr _____
- Inquiry in the Humanities [HUM]
{3 semester credits}
- _____
- Inquiry in the Creative and Professional Arts [ARTS]
{3 semester credits}
- _____
- Inquiry in the Natural Sciences [BSCI] [PSCI]
{3 hours in Biological Science and 3 hours in
Physical Science plus 1 additional lab hour}
Biology 106 [BSCI] (L) 4 cr _____
Chem 105 [PSCI] (L) 4 cr _____
**Physics 101, 201
or 205 [PSCI] (L)** 4 cr _____
- **Integrative and Applied Learning**
Diversity [DIVR]
{3 semester credits}
- _____
- Integrative Capstone [CAPS]
{3 semester credits minimum}
Neurosci 490 [CAPS] _____

TOTAL 34 CREDITS

UPPER DIVISION REQUIREMENTS

- Junior Writing Portfolio _____
{Complete before taking Writing-in-the-Major courses}

FURTHER DEPARTMENTAL REQUIREMENTS

- **Biology 107 (L)** 4 cr _____
- **Chem 106 (L)** 4 cr _____
- **Chem 345 (L)** 4 cr _____
- **Chem 348 (L)** 4 cr _____
- **MBioS 301** 4 cr _____
- **MBioS 303** 4 cr _____
- **Neurosci 301 or 302** 3 cr _____
- **Neurosci 403 [M]** 3 cr _____
- **Neurosci 404 (L)** 4 cr _____
- **Neurosci 430 (L) [M]** 4 cr _____
- _____
- **Physics 102 (L) or 202 (L) or
206 (L)** 4 cr _____
- **Psych 311 or
Stat 212 or Math/Stat 360** 4 cr _____
- **Neurosci 305
or Neurosci 333
or Neurosci 409** 3-4 cr _____

FIVE (5) CREDITS FROM THE FOLLOWING

- **Biology 315** 4 cr _____
- **Biology 321** 4 cr _____
- **Biology 352** 3 cr _____
- **Biology 353** 4 cr _____
- **Biology 438** 3 cr _____
- **Biology 456** 3 cr _____
- **MBioS 305** 3 cr _____
- **MBioS 401** 3 cr _____
- **MBioS 420** 3 cr _____
- **Neurosci 305** 3 cr _____
- **Neurosci 409** 3 cr _____
- **Neurosci 425/426** 3+1 cr _____
- **Neurosci 495/499*** 1-3 cr _____
- **Psych 265** 3 cr _____
- **Psych 312** 4 cr _____
- **Psych 372** 3 cr _____
- **Psych 384** 3 cr _____
- **Psych 470** 3 cr _____
- **Psych 473** 3 cr _____
- **Psych 490** 3 cr _____
- **Psych 491** 3 cr _____
- **Physics 466** 3 cr _____
- **Vet_Ph 308** 4 cr _____

* VARIABLE CREDIT 1-3 per semester; a maximum of 2 credits of Neurosci 495 or 499 may be applied to the major as elective credits, a maximum of 5 credits may be counted towards graduation; to receive credit toward the major, students must be a certified Neuroscience major

B.S. SUGGESTED SCHEDULE – PRE-MEDICAL/PRE-DENTAL OPTION (UCORE)

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------------------------|-----------|--------|
| Math 106 | 3 | |
| Chem 105¹ (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Psych 105 | 3 | [SSCI] |
| Neurosci 138 | 1 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|------------------------------------|-----------|--------|
| Biology 107² (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| History 105 | 3 | [ROOT] |
| Math 108 | 2 | |
| Humanities | 3 | [HUM] |
| TOTAL | 16 | |

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
² Biology 106 requires an ALEKS score > 40% or previous college biology credit
 Biology 107 requires previous college credit or concurrent enrollment in Chem

SOPHOMORE

| FALL SEMESTER | HOURS | |
|---------------------------------------|-----------|------------------|
| Biology 106² (L) | 4 | [BSCI] |
| Chem 345³ (L) | 4 | |
| Oral <u>or</u> Written communications | 3 | [COMM] or [WRTG] |
| Math 140 or 171 | 4 | [QUAN] |
| TOTAL | 15 | |

| SPRING SEMESTER | HOURS | |
|-----------------------------|-----------|--------|
| Neurosci 301 | 3 | |
| Physics 101 (L) | 4 | [PSCI] |
| Diversity class | 3 | [DIVR] |
| Chem 348³ | 4 | |
| TOTAL | 14 | |

³Chem 345 & 348 are required for entrance to some medical, dental, optometry, and pharmacy schools

- Apply for Certification in Neuroscience

JUNIOR

| FALL SEMESTER | HOURS | |
|--|-----------|--------|
| Biology 315⁴(L) <u>or</u> Elective | 4 | |
| MBioS 301 | 4 | |
| Physics 102 (L) | 4 | [PSCI] |
| Behavior Course ⁵ | 3 | |
| TOTAL | 15 | |

- Complete *UNIVERSITY WRITING PORTFOLIO*

| SPRING SEMESTER*** | HOURS | |
|-------------------------|-----------|--------|
| MBioS 303 | 4 | |
| Fine Arts | 3 | [ARTS] |
| Electives | 6 | |
| Neurosci 404 (L) | 4 | |
| TOTAL | 15 | |

⁴ Recommended for pre-med / pre-dental students (elective)
⁵ SELECT ONE: Neurosci 305 or 333 or 409
 *** MCATs may be taken anytime prior to medical school application; OAT offered February & October; DAT may be taken anytime prior to dental school application. Keep credits light for studying.

SENIOR

| FALL SEMESTER | HOURS | |
|-------------------------------------|-----------|-----|
| Neurosci 430 (L) | 4 | [M] |
| Electives | 8 | |
| Psych 311 <u>or</u> Stat 212 | 4 | |
| TOTAL | 16 | |

| SPRING SEMESTER | HOURS | |
|---|-----------|--------|
| Electives | 5 | |
| MBioS 305⁵ <u>or</u> Elective | 4 | |
| Neurosci 403 | 3 | [M] |
| Neurosci 490 | 3 | [CAPS] |
| TOTAL | 15 | |

⁵ MBioS 305 is required for pre-dental and pre-optometry students

- Minimum of 120 Credits

Elective Options recommended for Pre-Professional Students; See Catalog for prerequisites:

Biology 315 (L) (4 cr): *Gross and Micro Anatomy*
 MBioS 305 (3 cr): *General Microbiology*
 MBioS 405 (3 cr): *Cell Biology of Disease*

MBios 423 (3 cr): *Human Genetics*
 MBioS 440 (3 cr): *Immunology*
 Consult Advisor for other optional electives

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: PRE-VETERINARY OPTION

B.S. CURRICULUM REQUIREMENTS – PRE-VETERINARY OPTION (including ELECTIVES and UCORE)

UNIVERSITY COMMON REQUIREMENTS

- **First Year Experience [ROOT]**
{3 semester credits}
History 105 3 cr _____
- **Foundational Competencies:**
Communication or Written Communication [COMM] [WRTG]
{6 semester credits; minimum of 3 must be Written [W]}
English 101 [WRTG] 3 cr _____
[WRTG] **or** [COMM] 3 cr _____
- Quantitative Reasoning [QUAN]
Math 140 or 171 4 cr _____
- **Ways of Knowing**
Inquiry in the Social Sciences [SSCI]
{3 semester credits}
Psych 105 [SSCI] 3 cr _____
- Inquiry in the Humanities [HUM]
{3 semester credits}
- _____
- Inquiry in the Creative and Professional Arts [ARTS]
{3 semester credits}
- _____
- Inquiry in the Natural Sciences [BSCI] [PSCI]
{3 hours in Biological Science and 3 hours in
Physical Science plus 1 additional lab hour}
Biology 106 [BSCI] (L) 4 cr _____
Chem 105 [PSCI] (L) 4 cr _____
**Physics 101, 201
or 205 [PSCI] (L)** 4 cr _____
- **Integrative and Applied Learning**
Diversity [DIVR]
{3 semester credits}
- _____
- Integrative Capstone [CAPS]
{3 semester credits minimum}
- Neurosci 490 [CAPS]** _____

TOTAL 34 CREDITS

UPPER DIVISION REQUIREMENTS

- Junior Writing Portfolio _____
{Complete before taking Writing-in-the-Major courses}

FURTHER DEPARTMENTAL REQUIREMENTS

- **Biology 107 (L)** 4 cr _____
- **Chem 106 (L)** 4 cr _____
- **Chem 345 (L)** 4 cr _____
- **MBioS 301** 4 cr _____
- **MBioS 303** 4 cr _____
- **Neurosci 301 or 302** 3 cr _____
- **Neurosci 403 [M]** 3 cr _____
- **Neurosci 404 (L)** 4 cr _____
- **Neurosci 430 (L) [M]** 4 cr _____
- **Physics 102 (L) or 202 (L)
or 206 (L)** 4 cr _____
- **Psych 311 or
Stat 212 or Math/Stat 360** 4 cr _____
- **Neurosci 305
or Neurosci 333
or Neurosci 409** 3-4 cr _____

FIVE (5) CREDITS FROM THE FOLLOWING

- **Biology 315** 4 cr _____
- **Biology 321** 4 cr _____
- **Biology 352** 3 cr _____
- **Biology 353** 4 cr _____
- **Biology 438** 3 cr _____
- **Biology 456** 3 cr _____
- **MBioS 305** 3 cr _____
- **MBioS 401** 3 cr _____
- **MBioS 420** 3 cr _____
- **Neurosci 305** 3 cr _____
- **Neurosci 409** 3 cr _____
- **Neurosci 425/426** 3+1 cr _____
- **Neurosci 495/499*** 1-3 cr _____
- **Psych 265** 3 cr _____
- **Psych 312** 4 cr _____
- **Psych 372** 3 cr _____
- **Psych 384** 3 cr _____
- **Psych 470** 3 cr _____
- **Psych 473** 3 cr _____
- **Psych 490** 3 cr _____
- **Psych 491** 3 cr _____
- **Physics 466** 3 cr _____
- **Vet_Ph 308** 4 cr _____

* VARIABLE CREDIT 1-3 per semester; a maximum of 2 credits of Neurosci 495 or 499 may be applied to the major as elective credits, a maximum of 5 credits may be counted towards graduation; to receive credit toward the major, students must be a certified Neuroscience major

B.S. SUGGESTED SCHEDULE – PRE-VETERINARY OPTION (UCORE)

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------------------------|-----------|--------|
| Math 106 | 3 | |
| Chem 105¹ (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Psych 105 | 3 | [SSCI] |
| Neurosci 138 | 1 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|------------------------------------|-----------|--------|
| Biology 107² (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| History 105 | 3 | [ROOT] |
| Math 108 | 2 | |
| Humanities | 3 | [HUM] |
| TOTAL | 16 | |

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
² Biology 106 requires an ALEKS score > 40% or previous college biology credit
 Biology 107 requires previous college credit or concurrent enrollment in Chem

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------------------|-----------|------------------|
| Biology 106² (L) | 4 | [BSCI] |
| Chem 345³ (L) | 4 | |
| Oral or written communications | 3 | [COMM] or [WRTG] |
| Math 140 or 171 | 4 | [QUAN] |
| TOTAL | 15 | |

| SPRING SEMESTER | HOURS | |
|------------------------------|-----------|--------|
| MBioS 301⁴ | 4 | |
| Neurosci 301 | 3 | |
| Physics 101 (L) | 4 | [PSCI] |
| Fine Arts | 3 | [ARTS] |
| TOTAL | 14 | |

³ Physics 201 (requires Math 171 with C or better or placed into Math 172)
 Physics 202 (requires Math 172 with C or better or placement into Math 273)

JUNIOR

| FALL SEMESTER | HOURS | |
|------------------------------------|-----------|--------|
| Physics 102 (L) | 4 | [PSCI] |
| Psych 311 / Stat 212 (L) | 4 | |
| Behavior Course⁵ | 3 | |
| Elective | 4 | |
| TOTAL | 15 | |

- Complete **UNIVERSITY WRITING PORTFOLIO**
- Apply for Certification in Neuroscience

| SPRING SEMESTER | HOURS | |
|-----------------------------------|-----------|--|
| MBioS 303⁴ | 4 | |
| Vet_Ph 308⁶ (L) | 4 | |
| Electives | 6 | |
| TOTAL | 14 | |

⁴ Required for Vet school
⁵ SELECT ONE: Neurosci 305 or 333 or 409
⁶ Recommended as an elective; Prerequisites: Biology 107 and Junior standing

- Study for GRE and take before August 1st

SENIOR

| FALL SEMESTER | HOURS | |
|-------------------------|-----------|--------|
| Neurosci 430 (L) | 4 | [M] |
| Diversity | 3 | [DIVR] |
| Electives | 8 | |
| TOTAL | 15 | |

- Apply to Veterinary School by October 1

| SPRING SEMESTER | HOURS | |
|-------------------------|-----------|--------|
| Neurosci 404 (L) | 4 | |
| Electives | 7 | |
| Neurosci 403 | 3 | [M] |
| Neurosci 490 | 3 | [CAPS] |
| TOTAL | 17 | |

- Minimum of 120 Credits

Elective Options (recommended for Pre-Vet Students; See Catalog for prerequisites):

Anim_Sci 314 (3 cr): Principles of Nutrition
 Anim_Sci 330 (L) (3 cr): Animal Genetics
 Anim_Sci 350 (3 cr): Physiology of Reproduction
 Anim_Sci 485 (L) (3 cr) Applied Animal Behavior

Biology 321 (4 cr): Principles of Animal Development
 FS 330 (3 cr) [M]: Physiology of Nutrition
 MBioS 305 (3 cr): General Microbiology
 MBioS 440 (3 cr): Immunology

(L) Denotes a class that is combined with a laboratory. Non-sequential courses may be taken in a different order. Students should check with their Advisor when planning their program. Complete *WRITING PORTFOLIO* before taking [M] courses.

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: COMPUTATIONAL NEUROSCIENCE OPTIONS

Computational Neuroscience links the information processing features of the nervous system with information processing of computer systems. Accordingly, the Computational Neuroscience track supplements the Neuroscience core curriculum with computer and hardware engineering courses. In this way, students learn not only of the brain and its information processing mechanisms, but also of modern computer hardware and software technologies.

Courses in science and engineering have been selected to give as broad an exposure as possible to subjects that underlie the basic neural and computational sciences with an emphasis on the organism and the machine as information processing entities. Upon completion of the 4-year curriculum, a B.S. degree in Neuroscience will be awarded. Furthermore, the program is designed to allow students to acquire breadth in computational subjects or, alternatively, to focus on either software or hardware aspects of computation. Students choosing to acquire breadth in computational subjects will be well prepared for graduate study in most areas of neural and biomedical science, including biomedical engineering. Students choosing a software or hardware focus may obtain a minor in either computer science or computer engineering. All subject requirements for entry into Medical School are met by completion of the program of study in Computational Neuroscience.

CERTIFICATION REQUIREMENTS FOR COMPUTATIONAL NEUROSCIENCE

To certify a major in Computational Neuroscience, students must complete a minimum of 24 credit hours and have a cumulative 3.0 minimum grade point average (GPA) in the following math and science courses:

- **3.0 minimum GPA in the following:**

- Biology 106 and 107
- Chem 105 and 106 (or Chem 115/116)
- Math 171 and 172
- Physics 201 or 205
- Neurosci 301 or 302

The Neuroscience Baccalaureate Degree Program currently has a cap of 40 majors per class. Thus, we may be unable to certify all qualified students. In this situation, the most highly qualified students who apply will be selected for certification up to the enrollment limit.

Students who have certified must continue to maintain the 3.0 minimum GPA overall and in all courses required to fulfill the degree requirements or they may be de-certified from the major and their folders returned to the Academic Success and Career Center (ASCC) for reassignment.

B.S. CURRICULUM REQUIREMENTS – ALL COMPUTATIONAL OPTIONS

- **Core Prerequisites**

- **YEARS 1 & 2**

| PREFIX | COURSE NO. | UCORE | TITLE | HOURS |
|-------------------------------|--------------------|--------|---|-----------|
| Biology | 106 (L) AND | [BSCI] | Intro Biology – Organismal Biology | 4 |
| | 107 (L) | [BSCI] | Intro Biology – Cell Biology & Genetics | 4 |
| Chem | 105 (L) AND | [PSCI] | Principles of Chemistry | 4 |
| | 106 (L) | [PSCI] | Principles of Chemistry | 4 |
| Chem | 345 (L) | | Organic Chemistry I | 4 |
| Cpt_S | 121 AND | | Program Design & Development | 4 |
| | 122 | | Data Structures | 4 |
| E_E | 214 | | Design of Logic Circuits | 4 |
| Math | 171 AND | [QUAN] | Calculus I | 4 |
| | 172 AND | [QUAN] | Calculus II | 4 |
| | 216 | [QUAN] | Discrete Structures | 3 |
| Physics ¹ | 201 AND | [PSCI] | Physics for Scientists & Engineers | 4 |
| | 202 | [PSCI] | Physics for Scientists & Engineers | 4 |
| Psych | 105 | [SSCI] | Introduction to Psychology | 3 |
| YEARS 1 & 2 TOTAL: | | | | 54 |

¹ Students who qualify may substitute Physics 205/206 for Physics 201/202

- **Major CORE Courses**

- **YEARS 3 & 4**

| PREFIX | COURSE NO. | UCORE | TITLE | HOURS |
|-------------------------------|-------------------|--------|--|-----------|
| MBioS | 301 | | General Genetics | 4 |
| MBioS | 303 | | Introductory Biochemistry | 4 |
| Neurosci | 301 <u>or</u> 302 | | Foundations of Neuroscience or Honors Foundations of Neuroscience | 3 |
| Neurosci | 403 | [M] | Cellular Neurobiology | 3 |
| Neurosci | 404 | | Neuroanatomy | 4 |
| Neurosci | 425 | | Integrative Physiology | 3 |
| Neurosci | 426 | | Integrative Physiology Lab | 1 |
| Neurosci | 430 | [M] | Principles of Neurophysiology | 4 |
| Neurosci | 490 | [CAPS] | Senior Project | 1 |
| Phil | 201 | [HUM] | Elementary Logic | 3 |
| YEARS 3 & 4 TOTAL: | | | | 30 |

• **PLUS, Select One (1) of the Three Tracks Below:**

- **BREADTH-OF-FIELD TRACK:** allows the student to balance software and hardware courses and, in addition, include the modeling aspects of computation in their course of study. The BREADTH OF FIELD TRACK is recommended for students who wish to maximize the opportunities for advanced study following the B.S. degree.

| PREFIX | COURSE NO. | TITLE | HOURS |
|---------------|---------------|--|-----------|
| Bio_Eng | 340 | Unified Systems Bioengineering I | 4 |
| E_E | 261/262 | Electrical Circuits | 3/1 |
| Electives | (SEE PAGE 35) | Select nine (9) credits from elective list | 9 |
| Math | 220/273/315 | Linear Algebra / Calculus III / Differential Equations | 2/2/3 |
| TOTAL: | | | 24 |

- **HARDWARE EMPHASIS TRACK:** Neural circuitry and neural system components are both similar and different from electronic circuitry and computational system components. These similarities and differences are fundamental to the link between neurosciences and computational science. The HARDWARE EMPHASIS TRACK provides the Neuroscience student the opportunity to explore these similarities and differences.

| PREFIX | COURSE NO. | TITLE | HOURS |
|---------------|---------------|---|-----------|
| E_E | 261/262 | Electrical Circuits | 3/1 |
| E_E | 234 | Microprocessor Systems | 4 |
| E_E | 324 | Fundamentals of Digital Systems | 4 |
| E_E / Cpt_S | 300/400-Level | Select three (3) credits of upper division EE or Cpt_S from elective list | 3 |
| Electives | (SEE PAGE 35) | Select two (2) credits from elective list | 2 |
| Math | 220/273/315 | Linear Algebra / Calculus III / Differential Equations | 2/2/3 |
| TOTAL: | | | 24 |

- **SOFTWARE EMPHASIS TRACK:** Programmed instructions are the basis of machine intelligence. Through the SOFTWARE EMPHASIS TRACK, the student acquires a thorough background in machine instructions leading to intelligent machine operations. The two (2) courses that culminate this sequence (one in artificial intelligence, the other in human cognition) provide contrast between machine and human intelligence.

| PREFIX | COURSE NO. | TITLE | HOURS |
|---------------|---------------|--|-----------|
| Cpt_S | 223 | Advanced Data Structures | 3 |
| Cpt_S | 224 | Programming Tools | 2 |
| Cpt_S | 322 | Software Engineering Principles | 3 |
| Cpt_S | 440 | Introduction to Artificial Intelligence | 3 |
| Electives | (SEE PAGE 26) | Select five (5) credits from elective list; at least three (3) credits must be from the upper division Cpt_S | 5 |
| Psych | 490 | Cognition & Memory | 3 |
| TOTAL: | | | 19 |

- **Elective Courses**

With approval of the Curriculum Committee, other courses may satisfy the electives above for some students.

| PREFIX | COURSE NO. | TITLE | HOURS |
|----------|------------|---|-------|
| Biology | 315 | Gross & Micro Anatomy | 4 |
| Biology | 321 | Principles of Animal Development | 4 |
| Biology | 340 | Introduction to Mathematical Biology | 3 |
| Biology | 438 | Animcal Behavior | 3 |
| Biology | 456 | Neuroethology | 3 |
| Bio_Eng | 481 | Advanced Topics in Bioengineering | 1-3 |
| Cpt_S | 322 | Software Engineering Principles I | 3 |
| Cpt_S | 421 | Software Design Project I | 3 |
| Cpt_S | 422 | Software Engineering Principles II | 3 |
| Cpt_S | 423 | Software Design Project II | 3 |
| Cpt_S | 434 | Neural Network Design & Application | 3 |
| Cpt_S | 440 | Introduction to Artificial Intelligence | 3 |
| Cpt_S | 443 | Computer-Human Interaction | 3 |
| Cpt_S | 443 | Digital Image Processing | 3 |
| Cpt_S | 450 | Design & Analysis of Algorithms | 3 |
| E_E | 311 | Electronics | 3 |
| E_E | 321 | Electrical Circuits II | 3 |
| E_E | 324 | Fundamentals of Digital Systems | 4 |
| E_E | 341 | Signals & Systems | 3 |
| E_E | 441 | Digital Control | 3 |
| E_E | 442 | Robotics | 3 |
| E_E | 451 | Digital Communication Systems | 3 |
| E_E | 464 | Digital Signal Processing I | 3 |
| MBioS | 305 | Microbiology | 3 |
| MbioS | 401 | Cell Biology | 3 |
| MBioS | 404 | Molecular Biology | 3 |
| MbioS | 413 | General Biochemistry | 3 |
| MBioS | 478 | Bioinformatics | 3 |
| Neurosci | 305 | Neurons, Genes, and Behavior | 3 |
| Neurosci | 409/509 | Affective Neuroscience | 3 |
| Psych | 470 | Motivation | 3 |
| Psych | 490 | Cognition & Memory | 3 |
| Psych | 491 | Principles of Learning | 3 |
| Physics | 466/566 | Biological Physics | 3 |

* **GRADUATE STUDY BY SENIORS:** Seniors who have at least a 3.0 grade point average in the last half of their Undergraduate coursework at Washington State University may register for up to six (6) semester hours of work in the Graduate School in excess of the number of hours required to complete the Bachelor's Degree. Graduate School approval is required at the time of registration. Only grades of "B" or higher may be applied toward an advanced degree. Seniors who wish to enroll in 500-level courses for Undergraduate credit must obtain the approval of their Major Advisor and the Chair of the department or program in which the course is offered.

BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE: COMPUTATIONAL OPTIONS

B.S. CURRICULUM REQUIREMENTS – COMPUTATIONAL OPTIONS (including ELECTIVES and UCORE)

UNIVERSITY COMMON REQUIREMENTS

- **First Year Experience [ROOT]**
{3 semester credits}
 - History 105** 3 cr _____
 - **Foundational Competencies:**
 - Communication or Written Communication [COMM] [WRTG]
{6 semester credits; minimum of 3 must be Written [W]}
 - English 101 [WRTG]** 3 cr _____
 - [COMM] or [WRTG] 3 cr _____
 - Quantitative Reasoning [QUAN]
 - Math 171** 4 cr _____
 - **Ways of Knowing**
 - Inquiry in the Social Sciences [SSCI]
{3 semester credits}
 - Psych 105 [SSCI]** 3 cr _____
 - Inquiry in the Humanities [HUM]
{3 semester credits}
 - Phil 201 [HUM]** 3 cr _____
 - Inquiry in the Creative and Professional Arts [ARTS]
{3 semester credits}
 - _____ 3 cr _____
 - Inquiry in the Natural Sciences [BSCI] [PSCI]
{3 hours in Biological Science and 3 hours in
Physical Science plus 1 additional lab hour}
 - Biology 106 [BSCI] (L)** 4 cr _____
 - Chem 105 [PSCI] (L)** 4 cr _____
 - Physics 201 or 205 [PSCI] (L)** 4 cr _____
 - **Integrative and Applied Learning**
 - Diversity [DIVR]
{3 semester credits}
 - _____ 3 cr _____
 - Integrative Capstone [CAPS]
{3 semester credits minimum}
 - Neurosci 490 [CAPS]** _____
- TOTAL 37 CREDITS**

UPPER DIVISION REQUIREMENTS

- Junior Writing Portfolio
{Complete before taking Writing-
in-the-Major courses}
- Writing-in-the-Major [M] _____

² Other Electives: other course offerings on page 26

COMPUTATIONAL NEUROSCIENCE REQUIREMENTS

- **Biology 107 (L)** 4 cr _____
 - **Neurosci 425/426** 4 cr _____
 - **Chem 106 (L)** 4 cr _____
 - **Chem 345 (L)** 4 cr _____
 - **Cpt_S 121** 4 cr _____
 - **Cpt_S 122** 4 cr _____
 - **E_E 214** 4 cr _____
 - **Neurosci 301** 3 cr _____
 - **Math 172** 4 cr _____
 - **Math 216** 3 cr _____
 - **MBioS 301** 4 cr _____
 - **MBioS 303** 4 cr _____
 - **Neurosci 403 [M]** 3 cr _____
 - **Neurosci 404 (L)** 4 cr _____
 - **Neurosci 430 (L) [M]** 4 cr _____
 - **Physics 202 or 206 (L)** 4 cr _____
- TOTAL 64 CREDITS**

PLUS Selection of a specialization track (below):

- BREADTH-OF-FIELD TRACK (No minor)**
- **B_E 340** 4 cr _____
 - **E_E 261** 3 cr _____
 - **E_E 262** 1 cr _____
 - **Math 220** 2 cr _____
 - **Math 273** 2 cr _____
 - **Math 315** 3 cr _____
 - **Other Electives²** 9 cr _____
- 24 credits**
TOTAL 125 CREDITS

- SOFTWARE TRACK (Computer Science Minor)**
- **Cpt_S 223** 3 cr _____
 - **Cpt_S 224** 2 cr _____
 - **Cpt_S 322** 3 cr _____
 - **Cpt_S 440** 3 cr _____
 - **Other Electives²**
(min. 3 cr 300/400-level Cpt_S) 5 cr _____
 - **Psych 490** 3 cr _____
- 19 credits**
TOTAL 120 CREDITS

- HARDWARE TRACK (Computer Engr./EE Minor)**
- **E_E 261** 3 cr _____
 - **E_E 262** 1 cr _____
 - **E_E 234** 4 cr _____
 - **E_E 324** 4 cr _____
 - **E_E/Cpt_S**
(min. 3 cr 300/400-level) 5 cr _____
 - **Math 220** 2 cr _____
 - **Math 273** 2 cr _____
 - **Math 315** 3 cr _____
- 24 credits**
TOTAL 125 CREDITS

B.S. SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(BREADTH-OF-FIELD TRACK) UCORE

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------|-----------|--------|
| Chem 105 (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Fine Arts | 3 | [ARTS] |
| Math 171 (L) | 4 | [QUAN] |
| Psych 105 | 3 | [SSCI] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 107 (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| Cpt_S 121 (L) | 4 | |
| Math 172 (L) | 4 | |
| TOTAL | 16 | |

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------|-----------|------------------|
| Chem 345 (L) | 4 | |
| History 105 | 3 | [ROOT] |
| Physics 201 or 205 (L) | 4 | [PSCI] |
| Communications | 3 | [COMM] or [WRTG] |
| Phil 201 | 3 | [HUM] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 106 (L) | 4 | [BSCI] |
| Neurosci 301 | 3 | |
| Cpt_S 122 (L) | 4 | |
| MBioS 301 | 4 | |
| TOTAL | 15 | |

- Complete *WRITING PORTFOLIO* & Writing Assessment

JUNIOR

| FALL SEMESTER | HOURS | |
|---------------|-----------|--------|
| E_E 214 (L) | 4 | |
| Diversity | 3 | [DIVR] |
| Math 216 | 3 | |
| Math 220 | 2 | |
| Math 273 | 2 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|-----------------------|-----------|--|
| Math 315 | 3 | |
| MBioS 303 | 4 | |
| Neurosci 404 (L) | 4 | |
| Physics 202 or 206(L) | 4 | |
| TOTAL | 15 | |

SENIOR

| FALL SEMESTER | HOURS | |
|----------------------|-----------|-----|
| Neurosci 430 (L) | 4 | [M] |
| E_E 261 | 3 | |
| E_E 262 | 1 | |
| Neurosci 425/426 (L) | 3/1 | |
| Electives | 5 | |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Bio_Eng 340 (L) | 4 | |
| Neurosci 490 | 3 | [CAPS] |
| Neurosci 403 | 3 | [M] |
| Electives | 4 | |
| TOTAL | 14 | |

- Minimum of 125 Credits

(L) Denotes a class that is combined with a laboratory. Students should check with their Advisor when planning their program. Complete JUNIOR WRITING PORTFOLIO before taking [M] courses.

B.S. SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(HARDWARE TRACK) UCORE

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------|-----------|--------|
| Chem 105 (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Fine Arts | 3 | [ARTS] |
| Math 171 (L) | 4 | [QUAN] |
| Psych 105 | 3 | [SSCI] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 107 (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| Cpt_S 121 (L) | 4 | |
| Math 172 (L) | 4 | |
| TOTAL | 16 | |

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------|-----------|------------------|
| Chem 345 (L) | 4 | |
| History 105 | 3 | [ROOT] |
| Physics 201 or 205 (L) | 4 | [PSCI] |
| Communications | 3 | [COMM] or [WRTG] |
| Phil 201 | 3 | [HUM] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 106 (L) | 4 | [BSCI] |
| Neurosci 301 | 3 | |
| Cpt_S 122 (L) | 4 | |
| MBioS 301 | 4 | |
| TOTAL | 15 | |

- Complete *WRITING PORTFOLIO* & Writing Assessment

JUNIOR

| FALL SEMESTER | HOURS | |
|---------------|-----------|--------|
| E_E 214 (L) | 4 | |
| Diversity | 3 | [DIVR] |
| Math 216 | 3 | |
| Math 220 | 2 | |
| Math 273 | 2 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|-----------------------|-----------|--|
| Math 315 | 3 | |
| MBioS 303 | 4 | |
| Neurosci 404 (L) | 4 | |
| Physics 202 or 206(L) | 4 | |
| TOTAL | 15 | |

SENIOR

| FALL SEMESTER | HOURS | |
|----------------------|-----------|-----|
| Neurosci 430 (L) | 4 | [M] |
| E_E 234 (L) | 4 | |
| E_E 261 | 3 | |
| E_E 262 | 1 | |
| Neurosci 425/426 (L) | 3/1 | |
| TOTAL | 16 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------------------------------------|
| E_E 324 (L) | 4 | |
| Neurosci 403 | 3 | (M) |
| Neurosci 490 | 3 | [CAPS] |
| Electives* | 4 | *Min. 3 cr 300/400 level Cpt S or EE |
| TOTAL | 15 | |

- Minimum of 125 Credits

B.S. SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(SOFTWARE TRACK) UCORE

FRESHMAN

| FALL SEMESTER | HOURS | |
|---------------|-----------|--------|
| Chem 105 (L) | 4 | [PSCI] |
| English 101 | 3 | [WRTG] |
| Fine Arts | 3 | [ARTS] |
| Math 171 (L) | 4 | [QUAN] |
| Psych 105 | 3 | [SSCI] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 107 (L) | 4 | [BSCI] |
| Chem 106 (L) | 4 | [PSCI] |
| Cpt_S 121 (L) | 4 | |
| Math 172 (L) | 4 | |
| TOTAL | 16 | |

SOPHOMORE

| FALL SEMESTER | HOURS | |
|------------------------|-----------|------------------|
| Chem 345 (L) | 4 | |
| History 105 | 3 | [ROOT] |
| Physics 201 or 205 (L) | 4 | [PSCI] |
| Communications | 3 | [COMM] or [WRTG] |
| Phil 201 | 3 | [HUM] |
| TOTAL | 17 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------|
| Biology 106 (L) | 4 | [BSCI] |
| Neurosci 301 | 3 | |
| Cpt_S 122 (L) | 4 | |
| MBioS 301 | 4 | |
| TOTAL | 15 | |

- Complete *WRITING PORTFOLIO* & Writing Assessment

JUNIOR

| FALL SEMESTER | HOURS | |
|---------------|-----------|--|
| Math 216 | 3 | |
| Cpt_S 440 | 3 | |
| E_E 214 (L) | 4 | |
| MBioS 303 | 4 | |
| TOTAL | 14 | |

| SPRING SEMESTER | HOURS | |
|-------------------------------------|-----------|--|
| Cpt_S 223 | 3 | |
| Physics 202 or 206 ¹ (L) | 4 | |
| Psych 490 | 3 | |
| Neurosci 404 (L) | 4 | |
| TOTAL | 14 | |

SENIOR

| FALL SEMESTER | HOURS | |
|----------------------|-----------|--------|
| Neurosci 430 (L) | 4 | [M] |
| Cpt_S 224 | 2 | |
| Diversity | 3 | [DIVR] |
| Neurosci 425/426 (L) | 3/1 | |
| TOTAL | 13 | |

| SPRING SEMESTER | HOURS | |
|-----------------|-----------|--------------------------------|
| Cpt_S 322 | 3 | |
| Neurosci 403 | 3 | [M] |
| Neurosci 490 | 3 | [CAPS] |
| Electives* | 5 | *Min. 3 cr 300/400-level Cpt_S |
| TOTAL | 14 | |

- Minimum of 120 Credits

HONORS PROGRAM IN NEUROSCIENCE: GENERAL OPTION

Students in the Honors College complete a separate curriculum from the University Common Requirements (UCORE) completed by non-Honors College students. The Honors Program is a curriculum designed to enrich the student's education and to be completed without adding any time to a regular course of study.

The Program in Neuroscience, in conjunction with the Honors College, offers a Bachelor of Science (B.S.) in Neuroscience (General, Pre-Med/Pre-Dental, Pre-Pharm, Pre-Vet or Computational) and a 7-year Bachelor of Science (B.S.)/Doctorate of Veterinary Medicine (D.V.M.) Degree option.

CURRICULUM

The mission of the Honors College is to offer an enriched, four-year core curriculum to students of high ability and initiative. The Honors College provides students with the opportunity to challenge themselves in an engaged academic community in order to develop their full potential to lead and serve their local, national, and global communities. Through small classes taught by experienced and enthusiastic faculty dedicated to scholarship and learning, the Honors College helps students to develop genuine intellectual curiosity and a life-long love of learning, as well as skills in critical thinking, writing, public presentation, and information literacy.

The flexibility of the Honors curriculum encourages students to take courses that develop academic interests. Honors courses are taught by some of the finest faculty at WSU – instructors whose love of teaching makes their courses among the most popular on campus. **Students in the Honors Program must maintain a cumulative 3.2 GPA.**

Students must be officially admitted to the Honors College to participate in this program. Contact the Honors College at the address below for admittance procedures. If students have received Advanced Placement (AP) or Running Start credit, the Honors College will allow credit where appropriate (Honors Hall or e-mail: honors@wsu.edu).

FOREIGN LANGUAGE

Developing proficiency in a language in addition to English is key to success, regardless of your post-baccalaureate plans. The Honors College promotes developing a strong global cultural competency and requires proficiency in a second language. WSU offers a wide variety of languages, and many students choose one that will be helpful in their future studies and career.

STUDY ABROAD

Studying abroad is an important aspect of education and there are many excellent opportunities for Honors students. A study abroad experience...

- challenges your notions about other peoples and countries – and yourself
- provides deep and enriching intellectual experiences
- creates awareness and understanding of diversity

All Honors students are encouraged to study abroad. A Certificate of Global Competency is available for those completing certain requirements (<http://honors.wsu.edu/academics/cgc/>).

Although it is possible to earn credits toward graduation in a foreign country, you must meet with a Neuroscience Advisor at least one (1) semester before your study abroad experience begins to discuss the course you plan to take and the likelihood of those courses transferring back to WSU and the Neuroscience major. Science courses taught abroad are very difficult to evaluate and apply toward the major requirements. Petitions to accept Education Abroad credits are reviewed on a case-by-case basis.

THESIS REQUIREMENT

Students in the Honors College are required to complete an *HONOR THESIS* prior to graduation. All academic disciplines lend themselves to thesis work. Your thesis will be tied to an existing body of knowledge and can...

- involve your **original creative work** in the visual or performing arts
- evidence your **research** in the world of business or the physical, biological, or social sciences
- highlight your historical research in an archive or library that is tied to your own **hypothesis**

You may explore a problem within a single discipline or **pose an interdisciplinary question**. Or you can **incorporate your study abroad experience** into your thesis.

However, *in all cases*, your thesis must be presented as a **significant piece of writing** and a **public oral presentation** that places your work within an academic framework. The written work must provide a synthesis of the relevant scholarly literature and analyze your work within that context.

While most Neuroscience majors take credits of Neurosci 499 to receive credit for research projects, Honors Neuroscience majors take one (1) credit of UH 450 and two (2) credits of Neurosci 450 to complete the combined Honors/Neuroscience research project (see *Honors College Thesis Proposal Form*, above) and receive credit toward their thesis. In addition to the oral *HONORS THESIS* presentation, Neuroscience majors are required to present a poster on their thesis research in the final semester before graduation (as part of Neurosci 490).

For further information about the Honors College, contact: Honors Program, Honors Hall/Room 130, Washington State University, Pullman, WA 99164-2012, phone: 509-335-4505, email: honors@wsu.edu.

HONORS COLLEGE THESIS PROPOSAL FORM

- Students who plan to begin their projects in the Fall semester should have their proposals submitted by **July 10**.
- Students who plan to begin their projects in the Spring semester should have their proposals submitted by **November 10**.
- Students who plan to begin their projects during the Summer should have their proposals submitted by **April 10**.

Name: _____ Email: _____
 Address: _____ Telephone: _____
 Semester beginning work: _____ Student ID: _____
 Semester presenting: _____ Semester(s) taking credits: _____

INDICATE HOW YOU WILL FULFILL THIS 3-CREDIT REQUIREMENT:

Honors College UH 450 _____ # of credits _____
 College of Sciences Course Number: _____ # of credits _____
 Other: **Neurosci 450** _____ # of credits _____

Title of Thesis/Project: _____
 Hypothesis/Research Question: _____

Name of Faculty Advisor: _____ **Advisor Email:** _____
Advisor Telephone: _____ **Department:** _____ **IPN:** _____ **Dept:** _____ **Zip:** **7520**

Faculty Advisor's Endorsement: Please mark the boxes below with an "x."

YES NO The bibliography includes respected sources in the field.
 YES NO The project involves independent work and thought on the part of the student.
 YES NO The project makes a contribution and is of value to others in the field.
 YES NO Three credits of work are reflected in the project.
 YES NO I have read the written proposal and find it satisfactory.

Faculty Advisor Signature: _____ Date: _____
 Honors College Approval Signature: _____ Date: _____
 Proposal Evaluators: _____ and _____

B.S. CURRICULUM REQUIREMENTS – GENERAL OPTION (HONORS)

HONORS COLLEGE REQUIREMENTS

- English 298 3 cr _____
- Math 140 or 171 4 cr _____
- Honors 270 3 cr _____
- Honors 280 3 cr _____
- Honors 290 3 cr _____
- Honors 370 3 cr _____
- Honors 380 3 cr _____
- Honors 390 3 cr _____
- Science Lab Course, select one: 4 cr _____
 Biology 106
 Biology 107
 Chem 105 or 115
 Physics 101 or 201 or 205
- Foreign Language 4-8 cr _____
 (STAMP test determines credits needed)
- Honors 398 HONORS THESIS Proposal 1 cr _____
- Honors 450 HONORS THESIS Presentation 1 cr _____

DEPARTMENTAL REQUIREMENTS

- Biology 106 (L) 4 cr _____
- Biology 107 (L) 4 cr _____
- Chem 105 or 115 (L) 4 cr _____
- Chem 106 or 116 (L) 4 cr _____
- Chem 345¹ (L) 4 cr _____
- MBioS 303 4 cr _____
- Neurosci 301 or 302 3 cr _____
- Neurosci 403 [M] 3 cr _____
- Neurosci 404 (L) 4 cr _____
- Neurosci 430 (L) [M] 4 cr _____
- Neurosci 490 [CAPS] 3 cr _____
- Neurosci 450² (HONORS THESIS) 2 cr _____
- Physics 101 or 201 or 205 (L) 4 cr _____
- Physics 102 or 202 or 206 (L) 4 cr _____
- Psych 105³ 3 cr _____
- Psych 311 or Stat 212 (L) 4 cr _____
- Neurosci 305
 or Neurosci 333
 or Neurosci 409 3-4 cr _____

NOTES:

¹ Chem 348 is also required for pre-meds

² A maximum of 5 credits of Neurosci 450, 495, and 499 may be applied to the major; to take Neurosci 450, student must be a certified major and have passed Neurosci 301 or 302.

³ Honors 270 may substitute for Psych 105 if taught by Psychology faculty

NINE (9) CREDITS FROM THE FOLLOWING:

- Biology 315⁴ 4 cr _____
- Biology 321 4 cr _____
- Biology 352 3 cr _____
- Biology 353 4 cr _____
- Biology 438 3 cr _____
- Biology 456 3 cr _____
- MBioS 301⁵ 4 cr _____
- MBioS 305⁶ 3 cr _____
- MBioS 401 3 cr _____
- MBioS 420 3 cr _____
- Neurosci 409 3 cr _____
- Psych 265 3 cr _____
- Psych 312 4 cr _____
- Psych 372 3 cr _____
- Psych 470 3 cr _____
- Psych 490 3 cr _____
- Psych 491 3 cr _____
- Psych 473 3 cr _____
- Psych 490 3 cr _____
- Physics 466 3 cr _____
- Vet_Ph 308⁷ 4 cr _____

⁴ Recommended for entrance into medical school

⁵ Required for entrance into medical or vet school

⁶ Required for entrance into dentistry school

⁷ Recommended for entrance into vet school

HONORS SUGGESTED SCHEDULE – GENERAL OPTION

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| English 298 | 3 |
| Chem 105 ¹ (L) | 4 |
| Biology 107 ² (L) | 4 |
| Neurosci 138 | 1 |
| Foreign Language | 4 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| Math 140 or 171 (L) | 4 |
| Chem 106 (L) | 4 |
| Physics 101 or 201 or 205 ³ (L) | 4 |
| Foreign Language | 4 |
| TOTAL | 16 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| Biology 106 ² (L) | 4 |
| Neurosci 302 | 3 |
| Honors 280 | 3 |
| Chem 345 ⁴ (L) | 4 |
| TOTAL | 14 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| Honors 290 | 3 |
| Physics 102 or 202 or 206 ³ (L) | 4 |
| Psych 105/ Honors 270 ⁵ | 3 |
| Electives | 4 |
| TOTAL | 14 |

- Complete **WRITING PORTFOLIO**

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
² Biology 106 requires an ALEKS score > 40% or previous college biology credit
³ Biology 107 requires previous college credit or concurrent enrollment in Chem 172. Physics 201 or 205 (requires Math 171 with C or better or placed into Math 172.) Physics 202 or 206 (requires Math 172 with C or better or placement into Math 273)
⁴ Chem 345 AND 348 are required for some medical, dental, optometry, and pharmacy schools
⁵ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

JUNIOR

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| Behavior Course ⁶ | 3 |
| MBioS 303 | 4 |
| Honors 370 | 3 |
| Honors 380 | 3 |
| Honors 390 | 3 |
| TOTAL | 16 |

- Complete **WRITING PORTFOLIO**

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| Neurosci 404 (L) | 4 |
| Neurosci 450 | 2 |
| Honors 398 | 1 |
| Electives | 8 |
| TOTAL | 15 |

SENIOR

| FALL SEMESTER | HOURS |
|---------------------------|-----------|
| Neurosci 430 (L) | 4 [M] |
| Psych 311 or Stat 212 (L) | 4 |
| Honors 450 | 1 |
| Electives | 7 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Electives | 7 |
| TOTAL | 13 |

- **Mimimum of 120 Credits**

⁶ SELECT ONE: Neurosci 305 or 333 or 409

B.S. CURRICULUM REQUIREMENTS – GENERAL OPTION (HONORS)
(with PRE-PHARMACY ELECTIVES)

HONORS COLLEGE REQUIREMENTS

- English 298 3 cr _____
- Math 140 or 171 or 182 4 cr _____
- Honors 270 3 cr _____
- Honors 280 3 cr _____
- Honors 290 3 cr _____
- Honors 370 3 cr _____
- Honors 380 3 cr _____
- Honors 390 3 cr _____
- Science Lab Course, select one: 4 cr _____
 Biology 106
 Biology 107
 Chem 105 or 115
 Physics 101 or 201 or 205
- Foreign Language 4-8 cr _____
 (STAMP test determines credits needed)
- Honors 398 *HONORS THESIS* Proposal 1 cr _____
- Honors 450 *HONORS THESIS* Presentation 1 cr _____

DEPARTMENTAL REQUIREMENTS

- Biology 106 (L) 4 cr _____
- Biology 107 (L) 4 cr _____
- Chem 105 or 115 (L) 4 cr _____
- Chem 106 or 116 (L) 4 cr _____
- Chem 345¹ (L) 4 cr _____
- MBioS 303 4 cr _____
- Neurosci 301 or 302 3 cr _____
- Neurosci 403 [M] 3 cr _____
- Neurosci 404 (L) 4 cr _____
- Neurosci 430 (L) [M] 4 cr _____
- Neurosci 490 3 cr _____
- Neurosci 450² (*HONORS THESIS*) 2 cr _____
- Physics 101 or 201 or 205 (L) 4 cr _____
- Physics 102 or 202 or 206 (L) 4 cr _____
- Psych 105³ 3 cr _____
- Psych 311 or Stat 212 (L) 4 cr _____
- Neurosci 305
 or Neurosci 333
 or Neurosci 409 3-4 cr _____

NOTES:

PHARMACY REQUIREMENTS**

- Biology 301 4 cr _____
- Biology 315 4 cr _____
- Biology 353 4 cr _____
- EconS 101¹ 3 cr _____
- English 402² 3 cr _____
- MBioS 305 3 cr _____
- Phil 365³ 3 cr _____

¹ Chem 348 is also required for pre-meds

² A maximum of 5 credits of Neurosci 450, 495, and 499 may be applied to the major; to take Neurosci 450, student must be a certified major and have passed Neurosci 301 or 302.

³ Honors 270 may substitute for Psych 105 if taught by Psychology faculty

**WSU Neuroscience students with an interest in Pre-Pharmacy must meet with the WSU Pre-Pharmacy Advisor in the Pre-Health Advising office for advising on Pre-Pharmacy requirements

HONORS SUGGESTED SCHEDULE – GENERAL OPTION
(with PRE-PHARMACY ELECTIVES)

FRESHMAN

| FALL SEMESTER | HOURS |
|----------------------------|-----------|
| Math 140 <u>or</u> 171 (L) | 4 |
| Chem 105 ¹ (L) | 4 |
| English 298 | 3 |
| Neurosci 138 | 1 |
| Foreign Language | 4 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|------------------------------------|-----------|
| Biology 107 ² (L) | 4 |
| Chem 106 (L) | 4 |
| Psych 105/ Honors 270 ³ | 3 |
| Foreign Language | 4 |
| TOTAL | 15 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|---|-----------|
| Biology 106 (L) | 4 |
| EconS 101 ⁴ | 3 |
| Physics 101, 201 <u>or</u> 205 ⁵ (L) | 4 |
| Honors 290 | 3 |
| TOTAL | 14 |

| SPRING SEMESTER | HOURS |
|---|-----------|
| Physics 102, 202 <u>or</u> 206 ⁵ (L) | 4 |
| Chem 345 ⁶ (L) | 4 |
| Neurosci 301 | 3 |
| Honors 280 | 3 |
| TOTAL | 14 |

• **Complete WRITING PORTFOLIO**

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%

² Biology 106 requires an ALEKS score > 40% or previous college biology credit
Biology 107 requires previous college credit or concurrent enrollment in Chem

³ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

⁴ Required for Pharmacy School

⁵ Physics 201 or 205 (requires Math 171 with C or better or placed into Math 172.)
Physics 202 or 206 (requires Math 172 with C or better or placement into Math 273)

⁶ Chem 345 AND 348 are required for some medical, dental, optometry, and pharmacy schools

JUNIOR

| FALL SEMESTER | HOURS |
|---------------------------|-----------|
| MBioS 303 | 4 |
| Chem 348 ⁶ (L) | 4 |
| Phil 365 ⁴ | 3 |
| MBioS 305 ⁴ | 3 |
| Honors 398 | 1 |
| TOTAL | 15 |

| SPRING SEMESTER** | HOURS |
|-----------------------|-----------|
| Biology/MBioS 301 | 4 |
| Psych 311 or Stat 212 | 4 |
| Neurosci 404 (L) | 4 |
| Neurosci 450 | 2 |
| Honors 370 | 3 |
| TOTAL | 17 |

SENIOR

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| Biology 315 ⁴ | 4 |
| Neurosci 430 (L) | 4 [M] |
| Behavior Course ⁷ | 3 |
| Honors 380 | 3 |
| Honors 390 | 3 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|-------------------------------|-----------|
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Neurosci 425/426 ⁴ | 4 |
| English 402 ⁴ | 3 |
| Honors 450 | 1 |
| TOTAL | 14 |

• **Minimum of 120 Credits**

⁷ SELECT ONE: Neurosci 305 or 333 or 409

** WSU Neuroscience students with an interest in Pre-Pharmacy must meet with the WSU Pre-Pharmacy Advisor in the College of Sciences for advising on Pre-Pharmacy requirements.

**B.S. CURRICULUM REQUIREMENTS – PRE-MEDICAL/PRE-DENTAL OPTION
(HONORS)**

HONORS COLLEGE REQUIREMENTS

- English 298 3 cr _____
- Math 140 or 171 or 182 4 cr _____
- Honors 270 3 cr _____
- Honors 280 3 cr _____
- Honors 290 3 cr _____
- Honors 370 3 cr _____
- Honors 380 3 cr _____
- Honors 390 3 cr _____
- Science Lab Course, select one: 4 cr _____
 Biology 106
 Biology 107
 Chem 105 or 115
 Physics 101 or 201 or 205
- Foreign Language 4-8 cr _____
 (STAMP test determines credits needed)
- Honors 398 **HONORS THESIS Proposal** 1 cr _____
- Honors 450 **HONORS THESIS Presentation** 1 cr _____

DEPARTMENTAL REQUIREMENTS

- Biology 106 (L) 4 cr _____
- Biology 107 (L) 4 cr _____
- Chem 105 or 115 (L) 4 cr _____
- Chem 106 or 116 (L) 4 cr _____
- Chem 345 (L) 4 cr _____
- Chem 348 (L) 4 cr _____
- MBioS 301 4 cr _____
- MBioS 303 4 cr _____
- Neurosci 301 or 302 3 cr _____
- Neurosci 403 [M] 3 cr _____
- Neurosci 404 (L) 4 cr _____
- Neurosci 430 (L) [M] 4 cr _____
- Neurosci 490 3 cr _____
- Neurosci 450¹ (**HONORS THESIS**) 2 cr _____
- Physics 101 or 201 or 205 (L) 4 cr _____
- Physcs 102 or 202 or 206 (L) 4 cr _____
- Psych 105² 3 cr _____
- Psych 311 or Stat 212 (L) 4 cr _____
- Neurosci 305
 or Neurosci 333
 or Neurosci 409 3-4 cr _____

FIVE (5) CREDITS FROM THE FOLLOWING:

- Biology 315³ 4 cr _____
- Biology 321 4 cr _____
- Biology 352 3 cr _____
- Biology 353 4 cr _____
- Biology 438 3 cr _____
- Biology 456 3 cr _____
- MBioS 301⁴ 4 cr _____
- MBioS 305⁵ 3 cr _____
- MBioS 401 3 cr _____
- MBioS 420 3 cr _____
- Neurosci 409 3 cr _____
- Psych 265 3 cr _____
- Psych 312 4 cr _____
- Psych 372 3 cr _____
- Psych 470 3 cr _____
- Psych 490 3 cr _____
- Psych 491 3 cr _____
- Psych 473 3 cr _____
- Psych 490 3 cr _____
- Physics 466 3 cr _____
- Vet_Ph 308⁶ 4 cr _____

³ Recommended for entrance into medical school
⁴ Required for entrance into medical or vet school
⁵ Required for entrance into dentistry school
⁶ Recommended for entrance into vet school

¹ A maximum of 5 credits of Neurosci 450, 495, and 499 may be applied to the major; to take Neurosci 450, student must be a certified major and have passed Neurosci 301 or 302.

² Honors 270 may substitute for Psych 105 if taught by Psychology faculty

HONORS SUGGESTED SCHEDULE – PRE-MEDICAL/PRE-DENTAL OPTION
(INCLUDING SUGGESTED ELECTIVES)

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| English 298 | 3 |
| Chem 105 ¹ (L) | 4 |
| Biology 107 ² (L) | 4 |
| Neurosci 138 | 1 |
| Foreign Language | 4 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| Math 140 <u>or</u> 171 (L) | 4 |
| Chem 106 (L) | 4 |
| Physics 101 <u>or</u> 201 <u>or</u> 205 ³ (L) | 4 |
| Foreign Language | 4 |
| TOTAL | 16 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|---------------------------|-----------|
| Biology 106 (L) | 4 |
| Neurosci 302 | 3 |
| Honors 280 | 3 |
| Chem 345 ⁴ (L) | 4 |
| TOTAL | 15 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| MBioS 301 | 4 |
| Chem 348 ⁴ (L) | 4 |
| Physics 102 <u>or</u> 202 <u>or</u> 206 ³ (L) | 4 |
| Psych 105/ Honors 270 ⁵ | 3 |
| TOTAL | 15 |

• **Complete WRITING PORTFOLIO**

- ¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
- ² Biology 106 requires an ALEKS score > 40% or previous college biology credit
- ³ Biology 107 requires previous college credit or concurrent enrollment in Chem
- ⁴ Physics 201 or 205 (requires Math 171 with C or better or placed into Math 172.)
- ⁵ Physics 202 or 206 (requires Math 172 with C or better or placement into Math 273)
- ⁴ Chem 345 AND 348 are required for some medical, dental, optometry, and pharmacy schools
- ⁵ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

• **Minimum of 120 Credits**

Elective Options (Recommended for Pre-Professional Students; See Catalog for Course Prerequisites):

Biology 394 (1 cr): *Medicine as a Career*
 MBioS 305 (3 cr): *General Microbiology*
 Phil 365 (3 cr): *Biomedical Ethics*
 Biology 353 (4 cr): *Mammalian Physiology*

HD 350 (3 cr): *Diversity in Contemporary Families*
 Engl 201 or 402 (3 cr): *Research and Writing or Technical and Prof Writing*
 Biology 352 (4 cr): *Cell Physiology*
 MBioS 401 (4 cr): *Cell Biology*

JUNIOR

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| MBioS 303 | 4 |
| Honors 290 | 3 |
| Honors 370 | 3 |
| Honors 380 | 3 |
| Behavior Course ⁶ | 3 |
| TOTAL | 16 |

| SPRING SEMESTER** | HOURS |
|------------------------------|-----------|
| Neurosci 404 (L) | 4 |
| Biology 315 ⁴ (L) | 4 |
| Honors 390 | 3 |
| Honors 398 | 1 |
| Elective | 3 |
| TOTAL | 15 |

⁶ SELECT ONE: SELECT ONE: Neurosci 305 or 333 or 409

** MCAT may be taken anytime prior to application to medical school; keep credits light for studying; OAT is offered February and October; DAT can be taken anytime prior to dental school application

SENIOR

| FALL SEMESTER | HOURS |
|-----------------------|-----------|
| Neurosci 430 | 4 [M] |
| Neurosci 450 | 2 |
| Psych 311 or Stat 212 | 4 |
| Electives | 6 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Honors 450 | 1 |
| Electives | 7 |
| TOTAL | 14 |

B.S. CURRICULUM REQUIREMENTS – PRE-VETERINARY OPTION (HONORS)

HONORS COLLEGE REQUIREMENTS

- English 298 3 cr _____
- Math 140 or 171 or 182 4 cr _____
- Honors 270 3 cr _____
- Honors 280 3 cr _____
- Honors 290 3 cr _____
- Honors 370 3 cr _____
- Honors 380 3 cr _____
- Honors 390 3 cr _____
- Science Lab Course, select one: 4 cr _____
 Biology 106
 Biology 107
 Chem 105 or 115
 Physics 101 or 201 or 205
- Foreign Language 4-8 cr _____
 (STAMP test determines credits needed)
- Honors 398 HONORS THESIS Proposal 1 cr _____
- Honors 450 HONORS THESIS Presentation 1 cr _____

DEPARTMENTAL REQUIREMENTS

- Biology 106 (L) 4 cr _____
- Biology 107 (L) 4 cr _____
- Chem 105 or 115 (L) 4 cr _____
- Chem 106 or 116 (L) 4 cr _____
- Chem 345 (L) 4 cr _____
- MBioS 301 4 cr _____
- MBioS 303 4 cr _____
- Neurosci 301 or 302 3 cr _____
- Neurosci 403 [M] 3 cr _____
- Neurosci 404 (L) 4 cr _____
- Neurosci 430 (L) [M] 4 cr _____
- Neurosci 490 3 cr _____
- Neurosci 450¹ (HONORS THESIS) 2 cr _____
- Physics 101 or 201 or 205 (L) 4 cr _____
- Physcs 102 or 202 or 206 (L) 4 cr _____
- Psych 105² 3 cr _____
- Psych 311 or Stat 212 (L) 4 cr _____
- Neurosci 305
 or Neurosci 333
 or Neurosci 409 3-4 cr _____

¹ A maximum of 5 credits of Neurosci 450, 495, and 499 may be applied to the major; to take Neurosci 450, student must be a certified major and have passed Neurosci 301 or 302.

² Honors 270 may substitute for Psych 105 if taught by Psychology faculty

FIVE (5) CREDITS FROM THE FOLLOWING:

- Biology 315³ 4 cr _____
- Biology 321 4 cr _____
- Biology 352 3 cr _____
- Biology 353 4 cr _____
- Biology 438 3 cr _____
- Biology 456 3 cr _____
- MBioS 301⁴ 4 cr _____
- MBioS 305⁵ 3 cr _____
- MBioS 401 3 cr _____
- MBioS 420 3 cr _____
- Neurosci 409 3 cr _____
- Psych 265 3 cr _____
- Psych 312 4 cr _____
- Psych 372 3 cr _____
- Psych 470 3 cr _____
- Psych 490 3 cr _____
- Psych 491 3 cr _____
- Psych 473 3 cr _____
- Psych 490 3 cr _____
- Physics 466 3 cr _____
- Vet_Ph 308⁶ 4 cr _____

³ Recommended for entrance into medical school

⁴ Required for entrance into medical or vet school

⁵ Required for entrance into dentistry school

⁶ Recommended for entrance into vet school

HONORS SUGGESTED SCHEDULE – PRE-VETERINARY OPTION
(WITH SUGGESTED ELECTIVES)

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------------------|-----------|
| English 298 | 3 |
| Chem 105 ¹ (L) | 4 |
| Biology 107 ² (L) | 4 |
| Neurosci 138 | 1 |
| Foreign Language | 4 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| Math 140 or 171 (L) | 4 |
| Chem 106 (L) | 4 |
| Physics 101 or 201 or 205 ³ (L) | 4 |
| Foreign Language | 4 |
| TOTAL | 16 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|---------------------------|-----------|
| Biology 106 (L) | 4 |
| Neurosci 302 | 3 |
| Honors 280 | 3 |
| Chem 345 ⁴ (L) | 4 |
| TOTAL | 15 |

| SPRING SEMESTER | HOURS |
|--|-----------|
| MBioS 301 | 4 |
| Chem 348 ⁴ (L) | 4 |
| Physics 102 or 202 or 206 ³ (L) | 4 |
| Psych 105/ Honors 270 ⁵ | 3 |
| TOTAL | 15 |

- Complete *WRITING PORTFOLIO*

¹ Chemistry 105 requires credit for or concurrent enrollment in Math 106 or higher, or an ALEKS score > 80%
² Biology 106 requires an ALEKS score > 40% or previous college biology credit
³ Biology 107 requires previous college credit or concurrent enrollment in Chem
⁴ Physics 201 or 205 (requires Math 171 with C or better or placed into Math 172.) Physics 202 or 206 (requires Math 172 with C or better or placement into Math 273)
⁵ Chem 345 AND 348 are required for some medical, dental, optometry, and pharmacy schools
⁶ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

JUNIOR

| FALL SEMESTER | HOURS |
|--|-----------|
| MBioS 303 | 4 |
| Psych 311 or Stat 212 ⁶ (L) | 4 |
| Honors 290 | 3 |
| Honors 370 | 3 |
| TOTAL | 14 |

| SPRING SEMESTER | HOURS |
|------------------------------|-----------|
| Neurosci 404 (L) | 4 |
| Behavior Course ⁷ | 3 |
| Vet_Ph 308 (L) | 4 |
| Honors 380 | 3 |
| Honors 398 | 1 |
| TOTAL | 15 |

- Study for GRE and take before August 1st

SENIOR

| FALL SEMESTER | HOURS |
|---------------|-----------|
| Neurosci 430 | 4 [M] |
| Neurosci 450 | 2 |
| Electives | 7 |
| Honors 390 | 3 |
| TOTAL | 16 |

- Apply to Veterinary School by October 1st

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Honors 450 | 1 |
| Electives | 8 |
| TOTAL | 15 |

- Minimum of 120 Credits

⁶ Or statistics course approved by advisor
⁷ SELECT ONE: Neurosci 305 or 333 or 409

Elective Options (Recommended for Pre-Vet Students; See Catalog for Prerequisites):

AS 350 (3 cr): *Physiology of Reproduction*
 Biology 321 (4 cr): *Principles of Animal Development*
 MBioS 233 (3 cr) [M]: *Human Nutrition*
 Vet_Med 361 (3 cr): *Ag Animal Health*

MBioS 305 (3 cr): *General Microbiology*
 MBioS 440 (3 cr): *Immunology*
 Vet_Med 394 (1 cr): *Vet Medicine as a Career*
 Phil 365 (3 cr) [H]: *Biomedical Ethics*

(L) Denotes a class that is combined with a laboratory. Non-sequential courses may be taken in a different order. Students should check with their Advisor when planning their program. Complete *WRITING PORTFOLIO* before taking [M] courses.

HONORS PROGRAM IN NEUROSCIENCE: COMPUTATIONAL OPTION

HONORS CURRICULUM REQUIREMENTS – COMPUTATIONAL OPTIONS

| | | |
|---|------|-------|
| • English 298 | 3 cr | _____ |
| • Math 171 | 4 cr | _____ |
| • Honors 270 ¹ | 3 cr | _____ |
| • Honors 280 | 3 cr | _____ |
| • Honors 290 | 3 cr | _____ |
| • Honors 370 | 3 cr | _____ |
| • Honors 380 | 3 cr | _____ |
| • Honors 390 | 3 cr | _____ |
| • Science Lab Course: | 4 cr | _____ |
| One from: <i>Biology 106, 107</i> | | |
| <i>Chem 105 or 115</i> | | |
| <i>Physics 101 or 201 or 205</i> | | |
| • Foreign Language | 8 cr | _____ |
| <i>(STAMP test determines credits needed)</i> | | |
| • Honors 398 THESIS Proposal | 1 cr | _____ |
| • Honors 450 THESIS Presentation | 1 cr | _____ |
| TOTAL 39 CREDITS | | |

COMPUTATIONAL NEUROSCIENCE CORE REQUIREMENTS

| | | |
|--------------------------|------|-------|
| • Biology 107 (L) | 4 cr | _____ |
| • Chem 105 (L) | 4 cr | _____ |
| • Chem 106 (L) | 4 cr | _____ |
| • Chem 345 (L) | 4 cr | _____ |
| • Cpt_S 121 | 4 cr | _____ |
| • Cpt_S 122 | 4 cr | _____ |
| • E_E 214 | 4 cr | _____ |
| • Math 172 | 4 cr | _____ |
| • Math 216 | 3 cr | _____ |
| • MBioS 301 | 4 cr | _____ |
| • MBioS 303 | 4 cr | _____ |
| • Neurosci 301 or 302 | 3 cr | _____ |
| • Neurosci 403 [M] | 3 cr | _____ |
| • Neurosci 404 (L) | 4 cr | _____ |
| • Neurosci 425/426 | 4 cr | _____ |
| • Neurosci 430 (L) [M] | 4 cr | _____ |
| • Neurosci 490 | 3 cr | _____ |
| • Neurosci 450 | 2 cr | _____ |
| • Phil 201 | 3 cr | _____ |
| • Physics 201 or 205 | 4 cr | _____ |
| • Physics 202 or 206 (L) | 4 cr | _____ |
| TOTAL 77 CREDITS | | |

PLUS Selection of a Specialization Track:

| | | |
|---|------|-------|
| <input type="checkbox"/> BREADTH-OF-FIELD TRACK | | |
| • B_E 340 | 4 cr | _____ |
| • E_E 261 | 3 cr | _____ |
| • E_E 262 | 1 cr | _____ |
| • Math 220 | 2 cr | _____ |
| • Math 273 | 2 cr | _____ |
| • Math 315 | 3 cr | _____ |
| • Other Electives | 9 cr | _____ |
| 24 credits | | |
| TOTAL 140 CREDITS | | |

| | | |
|--|------|-------|
| <input type="checkbox"/> SOFTWARE TRACK (Computer Science Minor) | | |
| • Cpt_S 223 | 3 cr | _____ |
| • Cpt_S 224 | 2 cr | _____ |
| • Cpt_S 322 | 3 cr | _____ |
| • Cpt_S 440 | 3 cr | _____ |
| • Other Electives (min 3 cr 300/400-level Cpt_S) | 5 cr | _____ |
| • Psych 490 | 3 cr | _____ |
| 19 credits | | |
| TOTAL 135 CREDITS | | |
| <input type="checkbox"/> HARDWARE TRACK (Computer Engineering Minor) | | |
| • E_E 261 | 3 cr | _____ |
| • E_E 262 | 1 cr | _____ |
| • E_E 234 | 4 cr | _____ |
| • E_E 324 | 4 cr | _____ |
| • E_E/Cpt_S (min. 3 cr 300/ 400-level E_E or Cpt_S) | 5 cr | _____ |
| • Math 220 | 2 cr | _____ |
| • Math 273 | 2 cr | _____ |
| • Math 315 | 3 cr | _____ |
| 24 credits | | |
| TOTAL 140 CREDITS | | |

OTHER OPTIONAL ELECTIVE COURSES²:

| | | |
|-----------------------------|------|-------|
| • Biology 315 | 4 cr | _____ |
| • Biology 321 | 4 cr | _____ |
| • Biology 352 | 3 cr | _____ |
| • Cpt_S 422 | 3 cr | _____ |
| • Cpt_S 423 | 3 cr | _____ |
| • Cpt_S 434 | 3 cr | _____ |
| • Cpt_S 440 | 3 cr | _____ |
| • Cpt_S 443 | 3 cr | _____ |
| • Cpt_S 446 | 3 cr | _____ |
| • Cpt_S 445 | 3 cr | _____ |
| • Cpt_S 450 | 3 cr | _____ |
| • E_E 311 | 3 cr | _____ |
| • E_E 321 | 3 cr | _____ |
| • E_E 324 | 4 cr | _____ |
| • E_E 341 | 3 cr | _____ |
| • E_E 441 | 3 cr | _____ |
| • E_E 442 | 3 cr | _____ |
| • E_E 451 | 3 cr | _____ |
| • E_E 464 | 3 cr | _____ |
| • MBioS 378 | 3 cr | _____ |
| • MBioS 401 | 3 cr | _____ |
| • MBioS 420 | 3 cr | _____ |
| • Neurosci 409/509* | 3 cr | _____ |
| • Neurosci 495/499* | 3 cr | _____ |
| • Neurosci 526* | 2 cr | _____ |
| • Neurosci 529* | 3 cr | _____ |
| • Neurosci 540/541/542/543* | 3 cr | _____ |
| • Physics 466 | 3 cr | _____ |

¹ Honors 270 may replace Psych 105, if taught by a Psychology faculty member
² VARIABLE CREDIT 1-3 per semester; a maximum of 2 credits of Neurosci 495 or 499 may be applied to the major as elective credits, a maximum of 5 credits may be counted towards graduation; to receive credit toward the major, students must be a certified Neuroscience major

HONORS SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(BREADTH-OF-FIELD TRACK)

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------|-----------|
| Chem 105 (L) | 4 |
| English 298 | 3 |
| Math 171 (L) | 4 |
| Math 216 | 3 |
| Foreign Language | 4 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| Biology 107 (L) | 4 |
| Chem 106 (L) | 4 |
| Math 172 (L) | 4 |
| Math 220 | 2 |
| Foreign Language | 4 |
| TOTAL | 18 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|------------------------|-----------|
| Chem 345 (L) | 4 |
| Cpt_S 121 (L) | 4 |
| Phil 201 | 3 |
| Honors 280 | 3 |
| Physics 201 or 205 (L) | 4 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|-------------------------------------|-----------|
| Neurosci 301 | 3 |
| Biology 106 (L) | 4 |
| Honors 270 / Psych 105 ¹ | 3 |
| Cpt_S 122 (L) | 4 |
| Physics 202 or 206 (L) | 4 |
| TOTAL | 18 |

¹ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

JUNIOR

| FALL SEMESTER | HOURS |
|---------------|-----------|
| E_E 214 (L) | 4 |
| Honors 290 | 3 |
| Math 273 | 2 |
| MBioS 301 | 4 |
| Elective | 4 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| MBioS 303 | 4 |
| Neurosci 404 (L) | 4 |
| Math 315 | 3 |
| Honors 370 | 3 |
| Honors 380 | 3 |
| Honors 398 | 1 |
| TOTAL | 18 |

SENIOR

| FALL SEMESTER | HOURS |
|----------------------|-----------|
| E_E 261 | 3 |
| E_E 262 | 1 |
| Neurosci 430 (L) | 4 [M] |
| Honors 390 | 3 |
| Neurosci 450 | 2 |
| Neurosci 425/426 (L) | 3/1 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| Bio_Eng 340 | 4 |
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Honors 450 | 1 |
| Electives | 5 |
| TOTAL | 16 |

- Minimum of 140 Credits

(L) Denotes a class that is combined with a laboratory. Students should check with both their Major Advisor and their Honors Advisor when planning their program. Complete WRITING PORTFOLIO before taking [M] courses.

HONORS SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(HARDWARE TRACK)

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------|-----------|
| Chem 105 (L) | 4 |
| English 298 | 3 |
| Math 171 (L) | 4 |
| Math 216 | 3 |
| Foreign Language | 4 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| Biology 107 (L) | 4 |
| Chem 106 (L) | 4 |
| Math 172 (L) | 4 |
| Math 220 | 2 |
| Foreign Language | 4 |
| TOTAL | 18 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|-------------------------------|-----------|
| Chem 345 (L) | 4 |
| Cpt_S 121 (L) | 4 |
| Phil 201 | 3 |
| Honors 280 | 3 |
| Physics 201 <u>or</u> 205 (L) | 4 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|-------------------------------------|-----------|
| Neurosci 301 | 3 |
| Biology 106 (L) | 4 |
| Honors 270 / Psych 105 ¹ | 3 |
| Cpt_S 122 (L) | 4 |
| Physics 202 <u>or</u> 206 (L) | 4 |
| TOTAL | 18 |

¹ Honors 270 may replace Psych 105, if taught by a Psychology faculty member

JUNIOR

| FALL SEMESTER | HOURS |
|---------------|-----------|
| E_E 214 (L) | 4 |
| Honors 290 | 3 |
| Math 273 | 2 |
| MBioS 301 | 4 |
| Honors 370 | 3 |
| Honors 398 | 1 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| MBioS 303 | 4 |
| E_E 234 (L) | 4 |
| E_E 261 | 3 |
| E_E 262 | 1 |
| Honors 380 | 3 |
| Math 315 | 3 |
| TOTAL | 18 |

SENIOR

| FALL SEMESTER | HOURS |
|----------------------|-----------|
| E_E 324 (L) | 4 |
| Neurosci 430 (L) | 4 [M] |
| Honors 390 | 3 |
| Neurosci 450 | 2 |
| Neurosci 425/426 (L) | 3/1 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| Neurosci 404 (L) | 4 |
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Honors 450 | 1 |
| Electives | 5 |
| TOTAL | 16 |

- Minimum of 140 Credits

(L) Denotes a class that is combined with a laboratory. Students should check with both their Major Advisor and their Honors Advisor when planning their program. Complete WRITING PORTFOLIO before taking [M] courses.

HONORS SUGGESTED SCHEDULE – COMPUTATIONAL OPTION
(SOFTWARE TRACK)

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------|-----------|
| Chem 105 (L) | 4 |
| English 298 | 3 |
| Foreign Language | 4 |
| Math 171 (L) | 4 |
| Honors 280 | 3 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|------------------|-----------|
| Biology 107 (L) | 4 |
| Chem 106 (L) | 4 |
| Foreign Language | 4 |
| Math 172 (L) | 4 |
| TOTAL | 16 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|-----------------|-----------|
| Cpt_S 121 (L) | 4 |
| Honors 290 | 3 |
| Biology 106 (L) | 4 |
| Chem 345 (L) | 4 |
| TOTAL | 15 |

| SPRING SEMESTER | HOURS |
|-----------------------|-----------|
| Honors 270/ Psych 105 | 3 |
| Neurosci 301 | 3 |
| Phil 201 | 3 |
| Cpt_S 122 (L) | 4 |
| MBioS 301 | 4 |
| TOTAL | 17 |

- Complete *WRITING PORTFOLIO* & Writing Assessment

JUNIOR

| FALL SEMESTER | HOURS |
|-------------------------------|-----------|
| Math 216 | 3 |
| Cpt_S 440 | 3 |
| E_E 214 (L) | 4 |
| MBioS 303 | 4 |
| Physics 201 <u>or</u> 205 (L) | 4 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|-------------------------------|-----------|
| Cpt_S 223 | 3 |
| Honors 370 | 3 |
| Physics 202 <u>or</u> 206 (L) | 4 |
| Psych 490 | 3 |
| Neurosci 404 (L) | 4 |
| Honors 398 | 1 |
| TOTAL | 18 |

SENIOR

| FALL SEMESTER | HOURS |
|----------------------|-----------|
| Neurosci 430 (L) | 4 [M] |
| Cpt_S 224 | 2 |
| Honors 380 | 3 |
| Honors 390 | 3 |
| Neurosci 425/426 (L) | 3/1 |
| TOTAL | 16 |

| SPRING SEMESTER | HOURS |
|-----------------|-----------|
| Cpt_S 322 | 3 |
| Neurosci 403 | 3 [M] |
| Neurosci 490 | 3 |
| Neurosci 450 | 2 |
| Honors 450 | 1 |
| Electives* | 5 |
| TOTAL | 17 |

*Min. 3 cr 300/400-level Cpt_S

- Minimum of 135 Credits

HONORS PROGRAM IN NEUROSCIENCE: ACCELERATED PRE-VETERINARY OPTION

This option has been established for admission of highly academically qualified students to the Doctor of Veterinary Medicine (D.V.M.) program at the Washington State University College of Veterinary Medicine (CVM). Accepted students are pre-admitted directly to the D.V.M. program upon completion of one year of undergraduate work at the University. Satisfactory completion of this 7-year curriculum leads to the Bachelor of Science (B.S.) in Neuroscience and Doctor of Veterinary Medicine (D.V.M.) degrees. The program of study consists of three years of undergraduate coursework that fulfills the pre-veterinary neuroscience requirements followed by the four-year D.V.M. Program. Applicants should identify themselves to the Honors College as soon as they decide to enroll at the University because the number of available seats in the B.S./D.V.M. Program is limited.

To qualify for continuation into the Doctor of Veterinary Medicine (D.V.M.) Degree Program, a student must achieve an overall grade point average of 3.50 or better in all Undergraduate coursework.

ADMISSION REQUIREMENTS

All students who qualify for admission to the WSU Honors College are eligible to apply for pre-admission to the College of Veterinary Medicine after one (1) year of Honors pre-veterinary coursework. (*Admission to the Honors College is by separate application, which can be downloaded from the Honors web page. The deadline to apply for admission to the Honors College is February 1st of each year.*)

As a student in the Honors College, and upon completion of one (1) year in the Pre-Veterinary Neuroscience curriculum, students may apply to the D.V.M. Program. Early admission to the D.V.M. Program requires approval of the CVM Admissions Committee. Requirements for admission include the following:

1. **High School GPA and SAT/ACT scores-** Sufficient for admission into the WSU Honors College and a WSU GPA of 3.50 or higher in the first year of the Pre-Veterinary Neuroscience and Honors curriculum.
2. **Letter of Intent-** No more than two (2) pages stating the Applicant's professional goals and previous applicable experience. Experience with animals and work with a licensed veterinarian are required.
3. **Letters of Reference-** Three (3) Letters of Reference are required:
 - Two (2) Letters from college professors who can evaluate the oral and written communication skills, as well as the scientific background of the Applicant. At least one (1) of these letters should be from an Honors College professor; and,
 - One (1) letter from a graduate veterinarian with whom the Applicant has had contact and who knows the Applicant well enough to provide meaningful comments.

For more information, please contact the WSU Honors College at (509) 335-4505.

Curriculum requirements are on the following page.

CURRICULUM REQUIREMENTS – ACCELERATED PRE-VET OPTION

HONORS COLLEGE REQUIREMENTS

- English 298 3 cr _____
- Math 140* or 171 or 182 4 cr _____
- Honors 270 3 cr _____
- Honors 280 3 cr _____
- Honors 290 3 cr _____
- Honors 370 3 cr _____
- Honors 380 3 cr _____
- Honors 390 3 cr _____
- Science Lab Course: 4 cr _____
Biology 106, Biology 107
Chem 105 or 115
Physics 101 or 201 or 205
- Foreign Language 4-8 cr _____
(STAMP test determines credits needed)
- Honors 398 1 cr _____
- Honors 450 1 cr _____

DEPARTMENTAL REQUIREMENTS

- Biology 106 (L) 4 cr _____
- Biology 107 (L) 4 cr _____
- Chem 105 or 115 (L) 4 cr _____
- Chem 106 or 116(L) 4 cr _____
- Chem 345 (L) 4 cr _____
- Neurosci 301 or 302 3 cr _____
- Biology / MBioS 301 4 cr _____
- MBioS 303 4 cr _____
- Neurosci 403 [M] 3 cr _____
- Neurosci 430 (L) [M] 4 cr _____
- Neurosci 490 3 cr _____
- Neurosci 450 2 cr _____
- Physics 102 or 202 or 206 (L) 4 cr _____
- Psych 105**
- Psych 311 or Stat 212 4 cr _____
- Neurosci 305
or Neurosci 333
or Neurosci 409 3-4 cr _____

** Honors 270 may replace Psych 105, if taught by a Psychology faculty member

ELECTIVE COURSES

- {A minimum of five (5) credits must be taken from the following list of electives}
- Biology 315 4 cr _____
 - Biology 321 4 cr _____
 - Biology 352 3 cr _____
 - Biology 353 4 cr _____
 - Biology 438 3 cr _____
 - Biology 456 3 cr _____
 - MBioS 305 3 cr _____
 - MBioS 401 3 cr _____
 - MBioS 420 3 cr _____
 - Neurosci 409 3 cr _____
 - Psych 312 4 cr _____
 - Psych 372 3 cr _____
 - Psych 384 3 cr _____
 - Psych 470 3 cr _____
 - Psych 473 3 cr _____
 - Psych 490 3 cr _____
 - Psych 491 3 cr _____
 - Physics 466 3 cr _____
 - Vet_Ph 308 3 cr _____

PROFESSIONAL VETERINARY PROGRAM (DVM)

- Vet_Med 511P (Fall) 5 cr _____
- Vet_Med 520P (Spring) 5 cr _____
- Vet_Med 521P¹ (Spring) 3 cr _____
- Vet_Med 617P 3 cr _____

• Total Minimum Hours 120

¹ Replaces Neurosci 404

Balance of 1st Year Professional D.V.M. Curriculum satisfies the requirement needed for graduation with a B.S. Degree in Neuroscience.

NOTES:

HONORS SUGGESTED SCHEDULE – ACCELERATED PRE-VET OPTION

FRESHMAN

| FALL SEMESTER | HOURS |
|------------------|-----------|
| CHEM 105 (L) | 4 |
| BIOLOGY 107 (L) | 4 |
| Foreign Language | 4 |
| MATH 140 or 171 | 4 |
| NEUROSCI 138 | 1 |
| TOTAL | 17 |

| SPRING SEMESTER | HOURS |
|-------------------------|-----------|
| ENGLISH 298 | 3 |
| CHEM 106 or 116 (L) | 4 |
| Foreign Language | 4 |
| HONORS 270 ¹ | 3 |
| PHYSICS 101 (L) | 4 |
| TOTAL | 18 |

SOPHOMORE

| FALL SEMESTER | HOURS |
|------------------------|-----------|
| BIOLOGY 106 (L) | 4 |
| NEUROSCI 301 | 3 |
| PSYCH 105 ¹ | 3 |
| Electives | 2 |
| HONORS 280 | 3 |
| TOTAL | 16 |

| SPRING SEMESTER [†] | HOURS |
|-----------------------------------|--------------|
| HONORS 290 | 3 |
| CHEM 345 (L) | 4 |
| PHYSICS 102 (L) | 4 |
| Behavior Requirement ² | 3-4 |
| TOTAL | 14-15 |

[†] APPLY for certification as a Neuroscience major at the end of this semester; complete Writing Portfolio

JUNIOR

| FALL SEMESTER | HOURS |
|------------------|-----------|
| MBIOS 301 | 4 |
| MBIOS 303 | 4 |
| NEUROSCI 430 (L) | 4 [M] |
| NEUROSCI 450 | 2 |
| HONORS 370 | 3 |
| HONORS 398 | 1 |
| TOTAL | 18 |

| SPRING SEMESTER | HOURS |
|-------------------------|-----------|
| NEUROSCI 403 | 3 [M] |
| NEUROSCI 490 | 3 |
| Statistics ³ | 4 |
| HONORS 380 | 3 |
| HONORS 390 | 3 |
| HONORS 450 | 1 |
| TOTAL | 17 |

- Total of 103-104 Credit Hours

SENIOR

The following Professional D.V.M. courses satisfy the remaining requirements for the Neuroscience degree:

| 1 ST YEAR FALL CURRICULUM | HOURS |
|--|-----------|
| VET_MED 511 | 5 |
| Additional DVM Coursework ⁴ | 10 |
| TOTAL | 15 |

| 1 ST YEAR SPRING CURRICULUM | HOURS |
|--|-----------|
| VET_MED 520 (Spring) | 5 |
| VET_MED 521 ⁵ (Spring) | 3 |
| Additional DVM Coursework ⁴ | 7 |
| TOTAL | 15 |

- Total of 133-134 Credits
- Total Minimum of 120 Credits

¹ HONORS 270 may replace Psych 105 if HONORS 270 is taught by a member of the Psychology faculty.

² Choose one course from: NEUROSCI 305, 333, or 409

³ Choose one course from: PSYCH 311, STAT 212, 360, 370, or 412.

⁴ Additional D.V.M. courses required in the first year satisfy the Neuroscience elective requirement for the B.S. in Neuroscience. Students must complete a minimum of 30 semester hours of credit in 500-level (professional or graduate) courses, while pursuing the subsequent D.V.M. degree in order to complete the requirements for the accelerated baccalaureate degree.

⁵ VET_MED 521 satisfies the Neuroanatomy (Neurosci 404) requirement for the B.S. in Neuroscience.

MINOR IN NEUROSCIENCE CURRICULUM REQUIREMENTS

Students may apply for a Minor in Neuroscience once they have completed 60 semester credit hours including Neurosci 301 or 302 and have a 2.75 GPA; however, they can take Minor coursework at anytime as long as they meet the prerequisites. “Minor Certification” forms are available in the Neuroscience Office and the Academic Success and Career Center (ASCC), Lighty Student Services Building.

A Minor in Neuroscience requires 16 credit hours, with at least 13 at or above the 300-level. Courses needed to satisfy the Minor must include: Neurosci 301 or 302; three (3) credits selected from Neurosci 409, Psych 470, 490, 491, Biology 438, or 456; and at least six (6) credits selected from the following: Neurosci 403, 404, or 430. Up to five (5) credits of Neurosci 450, 495 or 499 may be included. Upon the approval of the Advisor, students minoring in Neuroscience may include 500-level courses in their minor program – provided they meet the graduate study requirements below and obtain the consent of the faculty member(s) teaching the course prior to registration. **Students must maintain a minimum 2.75 GPA in the required courses** to remain certified as a Neuroscience Minor.

The courses acceptable for satisfying the requirements of a Neuroscience Minor are as follows:

CORE COURSES – 16 CREDITS REQUIRED FOR MINOR

| PREFIX & COURSE NO. | TITLE | HOURS |
|---|---|-----------|
| REQUIRED: | | |
| • Neurosci 301 or 302 | Foundations of Neuroscience/ Honors Foundations of Neuroscience | 3 |
| SELECT AT LEAST ONE COURSE FROM THE FOLLOWING: | | |
| • Neurosci 305 | Neurons, Genes, and Behavior | 3 |
| • Neurosci 333 | Techniques and Experimental Design in Neuroscience Research | 4 |
| • Neurosci 409 | Affective Neuroscience: Foundations of Human & Animal Emotion | 3 |
| SELECT AT LEAST SIX (6) CREDITS FROM THE FOLLOWING: | | |
| • Neurosci 403 [M] | Cellular Neurobiology | 3 |
| • Neurosci 404 (L) | Neuroanatomy | 4 |
| • Neurosci 430 (L) [M] | Principles of Neurophysiology | 4 |
| ELECTIVE: (minimum 4 credits) Choose from courses listed below | | |
| TOTAL: | | 16 |

ELECTIVE COURSE SELECTIONS

| PREFIX & COURSE NO. | TITLE | HOURS |
|---------------------|--|-------|
| • Biology 315 | Gross and Microanatomy | 4 |
| • Biology 321 | Principles of Animal Development | 4 |
| • Biology 352 | Cell Physiology | 3 |
| • Biology 353 | Mammalian Physiology | 4 |
| • Biology 438 | Animal Behavior | 3 |
| • Biology 456 | Neuroethology | 3 |
| • MBioS 301 | General Genetics | 4 |
| • MBioS 305 | General Microbiology | 3 |
| • MBioS 401 | Introduction to Cellular Biology | 3 |
| • Neurosci 138 | Introductory Neuroscience Seminar | 1 |
| • Neurosci 409 | Affective Neuroscience: Foundations of Human & Animal Emotions | 3 |
| • Neurosci 490 | Senior Project | 1 |
| • Psych 265 | Biopsychological Effects of Alcohol & Other Drugs | 3 |
| • Psych 312 | Experimental Methods in Psychology | 4 |
| • Psych 372 | Introduction to Physiological Psychology | 3 |
| • Psych 384 | Sensation & Perception | 3 |
| • Psych 390 | Operant Behavior | 3 |
| • Psych 473 | Advanced Physiological Psychology | 3 |
| • Physics 466 | Biological Physics | 3 |
| • Vet_Ph 308 | Functional Anatomy of Domestic Animals | 3 |

NEUROSCIENCE PROGRAM: RESEARCH EXPERIENCE

A research experience allows students the opportunity to build critical thinking skills by applying classroom theory to a real life situation. Under the guidance of a Neuroscience Faculty member, students are able to research a neuroscience topic of their choice.

Competition to gain admission into Graduate and Professional School is increasing due to the growing student population across the nation. Many students realize that participating in research will give them the necessary skills and experiences that will potentially make them better applicants for Professional and Graduate School. Research experience, networking, career exploration, enhancing laboratory skills and abilities, opportunities to publish your research findings, and Letters of Recommendations are just a few of the positive outcomes for Undergraduates who participate in a research experience.

The Neuroscience Program recommends that students complete a minimum of two (2) credits and up to a maximum of five (5) credits of research through Neurosci 495 (graded: “A, B, C, D, F”) and Neurosci 499 (graded: “S/F”) (also Neurosci 450 for Honors College students), or a combination of these courses. Students are encouraged to begin their research experience as early in their undergraduate career as possible. However, Neurosci 450, 495 and 499 credits cannot be taken until after certification in the major. Students who want to receive credit for work in a lab before they are certified majors should take Vet_Ph 499.

In order to register for Neurosci 450, 495 or 499 (or Vet_Ph 499) credits, students must complete an independent study contract (“yellow form”) with the Faculty mentor. A signed original must be turned into the Neuroscience Advisor. A copy of the “*Neuroscience Independent Study Contract*” form is available in VBR 207.

Students in the Neuroscience Program are also required to complete Neurosci 490 – Senior Project, in the last semester of their senior year. This is a capstone course which requires the student to complete a research project and to present their research in either a poster or oral presentation before graduation. Certified majors will be assigned a research mentor to help them develop and present this project. Mentors will be assigned based on the student’s interested and mentor availability. If the student is not already working in the research mentor’s lab, they will be enrolled in one credit of Neurosci 495 in the fall before enrolling in Neurosci 490 in order to develop their project.

NEUROSCIENCE PROGRAM FACULTY AND THEIR RESEARCH INTERESTS

To get most current information, refer to the following website for the Neuroscience Faculty directory:

<http://ipn.vetmed.wsu.edu/research>

SCHOLARSHIPS AND ACADEMIC HONORS

PRESIDENT'S HONOR ROLL / DEAN'S HONOR ROLL LIST

PRESIDENT'S HONOR ROLL

An Undergraduate student will be named to the President's Honor Roll under either of the following conditions:

- By achieving a grade point average (GPA) of 3.75 in at least nine (9) graded hours in a single term at Washington State University.
- By achieving a cumulative GPA of 3.50 based on at least fifteen (15) cumulative hours of graded work at Washington State University.

DEAN'S HONOR ROLL LIST

At the completion of each semester, certified students who have earned a GPA of 3.50 or better are recognized as Dean's Honor Roll recipients. Graduating Seniors with a cumulative GPA of 3.50 or better are awarded an Honor Cord to be worn at graduation.

Additionally, Freshman or first semester Transfer Students who have indicated an interest in Neuroscience are recognized as **Dean's Honor Roll** recipients if they have earned a cumulative GPA of 3.50 or better after their second semester in the Program.

SCHOLARSHIP OPPORTUNITIES

Washington State University awards federal, state and institutional financial aid to help meet the needs of our students. It is the mission of the Office of Student Financial Aid and Scholarship Services to provide our diverse student population access to Higher Education by recognizing individual achievements and reducing financial barriers which would otherwise discourage or prohibit qualified students from attending Washington State University.

The Neuroscience Program also sends out scholarship and fellowship opportunities periodically via our e-mail ListServ. To be notified of these opportunities, you will need to make sure the Program has your most current e-mail address.

NEUROSCIENCE SCHOLARSHIP ENDOWMENT

The WSU Program in Neuroscience offers an academic scholarship competition for Undergraduate and Transfer Students. The scholarship is open to advisees and certified majors. The Program in Neuroscience awards \$250-\$1000 scholarship(s) to the most qualified applicant(s) for the following academic year. Applicants must have a minimum 3.00 GPA.

Students interested in applying for scholarship must complete the WSU Academic Scholarship Application [<https://www.applyweb.com/apply/wsunivss/>]. Applications are due no later than January 31st (priority deadline is November 1st).

PETER A ZORNES MEMORIAL NEUROSCIENCE SCHOLARSHIP

AMOUNT: ~\$1,000-\$2,000

In memory of Peter A. Zornes, and to serve as an inspiration to others, a memorial neuroscience scholarship was established in honor of Peter A. Zornes. The scholarship is intended to benefit certified neuroscience undergraduate students like Peter.

Peter was raised in Oakesdale, a small, rural town in eastern Washington. In 1999, he started school at WSU as a Neuroscience major with the dream of becoming a physician. He graduated magna cum laude in 2003. In addition to his excellent scholastic accomplishments, Peter showed real leadership potential by participating in a number of extracurricular activities while a WSU student. During his first year at WSU, Peter worked diligently to earn a “walk-on” position on WSU’s baseball team. While he did not make the team, that did not stop him from seeking an outlet for his passion. Pete was very active coaching little league and high school baseball providing young people an opportunity to compete and learn good sportsmanship. However, baseball and neuroscience were not Peter’s only passions. He was also an avid musician and completed a double major in Music.

After graduating from WSU and living a short period in Ohio, Peter returned to Whitman County where he was to begin a research position in Dr. Joe Harding’s newly formed Bio-tech firm. This was not to be, however, as he was killed three weeks prior to the start of that job at the age of 25.

Eligibility Criteria:

1. Must be a current WSU Junior or Senior who will not graduate before the December after application for the scholarship.
2. Must be a WSU certified Neuroscience major or be certified before the scholarship begins.

Application procedures:

1. All Applicants must complete an application form available on the Undergraduate Neuroscience website
2. Submit the required essay addressing all the required topics (see online application for details).
3. Submit two professional letters of recommendation including at least one from a WSU academic instructor in one of the Neuroscience program content fields or a closely allied area. Professional references only. Letters should be pertinent, recent, and relevant reflections of the individual. (References from family, friends or peers will not be accepted.)

Deadline:

January 31st or later, please see the Undergraduate Neuroscience Website for the date each year.

Submitting required documents:

Via the online application located at: <http://ipn.vetmed.wsu.edu/neuroscience/undergraduate/zornes-scholarship-application>

Or email to grad.neuro@vetmed.wsu.edu

WSU ACADEMIC SCHOLARSHIPS

For all other WSU Academic Scholarships, including the Neuroscience Endowed Scholarship, complete the WSU Academic Scholarship Application no later than January 31st (priority deadline is November 1st). The WSU Academic Scholarship Application is available online at <http://www.finaid.wsu.edu/>.

GRADUATING IN NEUROSCIENCE

Upon completion of a minimum of 90 semester credit hours, students become eligible to apply to graduate. To apply, click the link in your student center, follow the prompts, and pay the required fee. This will generate a graduation “To-Do List” for the student. The “To-Do List” tells you what classes you must complete to graduate. It will be mailed to you in approximately 1-2 months. If you decide to change your graduation date, be sure to notify the Graduation Clerk in the Registrar’s Office. Please note, apply to graduate and signing up to walk in commencement are two separate actions.

Here are some questions to consider when thinking about graduation.

1. Have you completed 120 credit hours?
2. Do you have a second major or minor? Did you certify it?
3. Have you completed all the credits required for your Neuroscience major?
4. Do you have any incompletes? Be sure to complete them and make sure that the proper grade is recorded.
5. Remember, it is your responsibility to make sure you have completed all of the requirements for graduation. Check your records!

GRADUATION WITH HONORS

Candidates for Baccalaureate degrees, who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University, will graduate: **summa cum laude** – if the cumulative GPA for work completed at Washington State University is 3.90 or better; will graduate **magna cum laude** – if cumulative GPA is 3.70 to 3.89; or, will graduate **cum laude** – if the minimum cumulative GPA is above 3.50, but less than 3.70.

The appropriate Latin phrase will be printed on the diploma and on the final transcript. Qualified students electing to participate in the Honors College, who complete its requirements satisfactorily (regardless of whether they qualify to graduate **summa cum laude**, **magna cum laude**, or **cum laude**), will receive a certificate of completion and a printed notation on the final transcript.

College of Veterinary Medicine Neuroscience students graduating with a cumulative GPA of 3.50 or higher are recognized by the Dean and awarded an Honor Cord to wear at graduation.

Computation of graduation honors will be done prior to the final semester to allow for publication of the appropriate honors in advance of graduation. However following the student’s final semester, the Registrar’s Office will recalculate the student’s GPA (including the last semester’s work) and only this computation will determine official graduation honors on the diploma and transcript.

APPENDIX – GLOSSARY OF TERMS

- **A.A. Degree** – a transferable **Associate of Arts** degree is a 2-year degree granted by a community college. A transferable A.A. degree earned at a Washington or Oregon community college will satisfy all WSU UCORE requirements. Also sometimes called a DTA degree (Direct Transfer Associate’s degree).
- **A.S.T. Degree** – a transferable **Associate of Science Transfer** degree is a 2-year degree granted by a community college. Students who have completed the A.S.T. from a Washington community college will be given junior status. Additional general education, cultural diversity, and foreign language requirements (as required by WSU) must be met prior to the completion of a Baccalaureate degree. Students are responsible for checking specific major requirements in the year prior to transferring.
- **ASCC – Academic Success and Career Center.** All students not certified into their major are considered University College students or “undeclared” and are advised by the ASCC staff. The Center is located on the bottom floor of the Lighty Building, Room 180. Many student services are offered there, including tutoring, advising, job placement and internship assistance, help with disabilities, and other special programs.
- **Certification** – Upon completion of all requirements to enter a program, a student will be certified into their major. Once certified, a student has the right to finish his/her degree and will be allowed to take the upper division courses required for the major.
- **Credit Hour** – measurement of coursework. Most classes carry 3 credit hours, that means there are 3 contact hours per week. A minimum of 120 credit hours is required for a Bachelor’s degree. A minimum of 12 credit hours per semester is considered “full time” for financial aid purposes.
- **Cum laude** – A cumulative GPA of 3.50 to 3.69 upon completion of the degree.
- **Degree Audit** – Up-to-date summary of coursework remaining to complete degree. Can be obtained by accessing myWSU.
- **Freshman** – A student of any gender who has completed 0-29 credits towards a bachelor’s degree.
- **Graduation Application** – A student should apply for graduation before the end of their Junior year. Applications for graduation provide a “To-Do-List” and may take 6-8 weeks to process.
- **Junior** – A student who has completed 60-89 credits towards a bachelor’s degree.
- **Junior Writing Portfolio** – A two part evaluation of your writing ability to be completed upon reaching 60 credits (that is, Junior status). Consists of a 1-hour timed writing exam to a prompt and the submission of three representative samples of your writing from college courses.
- **Major** – A degree will be granted in a major area of study.
- **Magna cum laude** – A cumulative GPA of 3.70 to 3.89 upon completion of the degree.
- **Minor** – A concentration of courses outside the major area of study. Most minors require 18 credit hours in the field.
- **Post-Bac** – A student who has already received one bachelor’s degree and is working on a subsequent bachelor’s degree.

- **Rule 38 / 39** – Academic rules applying to students who earn a GPA lower than 2.0 either for a particular semester or cumulatively. These rules spell out the process by which a student can return to good academic standing. Rule 39 students often have to leave the university for one or more semesters.
- **Senior** – A student who has completed at least 90 credits towards the bachelor’s degree.
- **Sophomore** – A student who has completed 30-59 credits towards the bachelor’s degree.
- ***Summa cum laude*** – A cumulative GPA of 3.90 or higher upon completion of the degree.
- **Upper Division Courses** – are 300- and 400-level courses. These courses, or their equivalents, cannot be satisfied by taking similar courses at a 2-year institution.
- **UCORE** – University Core Requirements are all courses required by the University to graduate, for students entering as freshmen in Fall 2012 and beyond, or as transfer students in Fall 2013 and beyond. In addition to UCOREs, students must complete a group of courses required by their major department.
- **Waiving a Class** – exempts students from the class/es because they have taken a similar class or have had equivalent experience. Classes that have been waived may not carry credit hours toward graduation.
- **myWSU** – WSU portal that allows students to register, check email, set up financial aid, apply for scholarships, check progress toward graduation, and much more. Go to <http://my.wsu.edu>.

NOTES: