

### **STUDENTS MUST CONSULT WITH AN ACADEMIC ADVISOR & FILE A FORMAL PETITION**

- An ad-hoc interdisciplinary degree combining Biology & Psychology (i.e. Neurosciences) is for the student who is passionately interested in both disciplines.
  - The pedagogical goal in forming this program is to enhance unity between the Psychology and Biology topics that focus on how the brain works.
  - This ad-hoc major requires a student petition to be approved by both departments.
  - The unofficial neuroscience advisory committee includes: Cervený, Canseco-Gonzalez, Currie, Hackenberg, McClellan, Pitts, Renn, Zornik (note: it is possible to do a thesis with other faculty members from each department.)
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### **Major Requirements:**

#### **BIO101 & BIO102**

#### **PSY121 & PSY122**

#### **CHEM101 & CHEM102 (labs required)**

#### **CHEM201 & CHEM 202 (labs required) or PHYS101 & PHYS102 (labs required)**

#### **2 full unit courses in Math**

Suggested: Math 141 Probability & Math 121 Intro to Computing

\*note, Psych 348 can be taken in place of Math 141 but it does NOT count for group D

#### **2 units from the following**

PSY333 Behavioral Neuroscience **and** 1 additional “core” course (PSY381,373,393,366,351,361,322)

#### **2 units from the following (lab required)**

BIO381 Animal Physiology **and** 1 additional course from the following:

BIO372 Cell Biology **or** BIO356 Genetics & Gene Regulation **or** BIO363 Genes, Genetics, & Genomes

#### **1 “non-core” psychology unit from the following**

PSY336 Neuropsychology

PSY334 Cognitive Neuroscience

PSY330 Comparative Cognition

#### **2 units from the following**

BIO342 Animal Behavior

BIO351 Developmental Biology

PSY433 Behavioral Neuroscience Research

PSY417 Attention and Consciousness Research

\*note, lab may be dropped w/ permission of instructor, but the unit total must be 2

#### **2 unit Thesis** (advised by either a biology faculty or a psych faculty, see next page for details)

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**Total = 19 Units** required for this major (BMB is 18.5)

- All Group requirements except Group A are met with these courses.
- **Students must pass the junior qual in both biology and psychology.** If 5 psychology courses (2 core) have not been completed, student must petition to take that qual. If 3 upper level bio courses have not been completed, student must petition to take that qual.

*Suggested Electives:* relevant BIO431 Seminar Courses; Research in Learning & Comparative (PSY415); Neuropharmacology (PSY434); Psychology of Addictions (PSY319); Psycholinguistics Research (PSY439)

While a standing interdisciplinary “neuroscience major” may be established in the future, members of both departments have discussed this issue and have concluded that ad-hoc is the appropriate mechanism at this time.

**Petition Process:** Should be completed during Sophomore year when students first declare a major. Must be completed before the end of 1st semester of Junior year.

- 1) The student identifies 2 academic advisers, 1 in Biology and 1 in Psychology.
- 2) The student writes the proposal in consultation with both academic advisers.

The proposal must include:

- A full 4-year course plan (see examples below) with anticipated graduation date
  - Justification for the selected courses in relation to an interdisciplinary major
  - Demonstrate that a single major would not better handle this curriculum
  - A plan to complete both the Biology and the Psychology junior qualifying exams
  - Description of potential thesis area that goes beyond disciplinary boundaries
- 3) The student sends an electronic version of the complete proposal to both advisers.
  - 4) Each faculty then completes the supporting document required by that department and attaches that to the student's proposal. (This statement should verify the identify of the advisor in the other department)
  - 5) Each faculty then submits the petition and supporting doc to their own department via standard avenues (Biology circulates these by email via Departmental Assistant, Psychology circulates these by email via the Chairman).
  - 6) If necessary, either department may meet to discuss the petition.
  - 7) After the departmental vote the faculty members fill out the dispensations.
  - 8) If approved, the student completes a standard declaration of major form.
  - 9) An ad-hoc interdisciplinary declaration of major requires signatures from both academic advisers indicating departmental/divisional approval. It also requires the signatures of both departmental chairs.
  - 10) The student must submit the signed form to the registrar's office.

As per standard procedure for ad-hoc interdisciplinary majors, the student's academic record, the validity of the program and the student's potential to complete the proposed program successfully are the essential factors considered by the advisers, departments and divisions. As Biology and Psychology are in different divisions, any academic action and recommendation for graduation will be the oversight of the Administration committee.

**Thesis process:** There need only be one thesis adviser, however it is generally assumed that the student wishes to pursue a line of study that is sufficiently broad so as to benefit from input (to varying degrees) from faculty in different departments. At the beginning of senior year, students must discuss potential thesis ideas with at least 3 faculty members from Biology or Psychology (not necessarily those named on the unofficial neuroscience committee). The student must submit, to the unofficial neuroscience advisory committee, 3 thesis proposals (each with a different thesis advisor) indicating rank preference. The unofficial neuroscience committee will verify that projects have sufficient neuroscience content and, while considering student preference to the extent possible, will assign a thesis adviser.

Thesis orals boards must consist of the thesis advisor, one faculty member from the same department as the thesis advisor, one faculty member from the interdisciplinary department (biology or psychology), and one faculty member from a department other than biology or psychology.

The three thesis proposals need not be the topic specified in the petition, which should have been a more general statement of intent. A proposal for an off campus theses must be discussed with a Reed faculty advisor who is willing to act as on campus advisor.

**Student begins undecided between Bio & Psych major & is interested in Neuroscience.**

Freshman year

First Semester	units	Second Semester	units
Hum 110	1.5	Hum 110	1.5
Psy 121: Intro	1.0	Psy 122: Intro	1.0
Chem 101: Intro	1.0	Chem 101: Intro	1.0
		Bio102: Intro Bio	1.0
	3.5		4.5

Sophomore year

First Semester	units	Second Semester	units
Psy 334: Cogn. Neuro.	1.0	Bio 356: Gene Reg	1.0
Bio 101: Intro	1.0	Math 141	1.0
Psy 333: Behav Neurosci	1.0	Psy 433: Behavior Neuro Res	1.0
Group A	1.0	Psy 373 Learning	1.0
	4.0		4.0

Junior year

First Semester	units	Second Semester	units
Chem 201 or Phys 101	1.0	Chem 202 or Phys 102	1.0
Math 121: Intro to Computing	1.0	BIO 372: Cell Bio	1.0
BIO 381: Animal Phys	1.0	Psy 336: Neuropsychology	1.0
Group A	1.0	Elective	1.0
	4.0		4.0

Senior year

First Semester	units	Second Semester	units
Thesis	1.0	Thesis	1.0
Bio 342: Animal Behavior	1.0	Elective	1.0
Elective	1.0	Elective	1.0
	3.0		3.0

**Student begins as a Psych Major and still wants 1 semester abroad**

\*note, some overseas programs may have psych or bio equivalents to be counted toward the major

**Freshman year**

First Semester	units	Second Semester	units
Hum 110	1.5	Hum 110	1.5
Psy 121: Intro	1.0	Psy 122: Intro	1.0
Foreign Language (groupD)	1.0	Foreign Language (groupD)	1.0
		Group A	1.0
	3.5		4.5

**Sophomore year**

First Semester	units	Second Semester	units
Bio 101	1.0	Bio 102	1.0
Chem 101	1.0	Chem 102	1.0
Math 121: Intro to Computing	1.0	Psy 381: Sensory & Percept.	1.0
Psy 333: Behav Neurosci	1.0	Psy 348: methods	1.0
		Elective	0.5
	4.0		4.5

**Junior year**

First Semester	units	Second Semester	units
Bio342: Animal Behavior	1.0	abroad	
Bio363: Genetics / genomics	1.0		
Psy330: Comp. Cogn.	1.0		
Group A	1.0		
Elective	0.5		
	4.5		3.0

**Senior year**

First Semester	units	Second Semester	units
Thesis	1.0	Thesis	1.0
Chem 201	1.0	Chem 202	1.0
Bio 381: Animal Phys	1.0	Psy 373 Learning	1.0
	3.0		3.0

**Student begins a Bio Major and still wants 1 semester abroad**

\*note: some overseas programs may have psych or bio equivalents to be counted toward the major

**Freshman year**

First Semester	units	Second Semester	units
Hum 110	1.5	Hum 110	1.5
Bio 101	1.0	Bio 102	1.0
Chem 101	1.0	Chem 102	1.0
	3.5		3.5

**Sophomore year**

First Semester	units	Second Semester	units
Psy 121: Intro	1.0	Psy 122: Intro	1.0
Chem 201	1.0	Chem 202	1.0
Bio342: Animal Behavior	1.0	Math 141 Probability	1.0
elective	1.0	Bio351: Dev Bio	1.0
	4.0		4.0

**Junior year**

First Semester	units	Second Semester	units
Bio363: Genetics / Genomics	1.0	abroad	
Psy 333: Behav Neurosci	1.0		
Group A	1.0		
Math 121: Intro to Computing	1.0		
	4.0		3.0

**Senior year**

First Semester	units	Second Semester	units
Thesis	1.0	Thesis	1.0
Group A	1.0	Psy 433: Behav Neuroscie Res.	1.0
Bio 381: Animal Phsy	1.0	Psy 381 Sensory & Percept.	1.0
elective	1.0	elective	1.0
	4.0		3.0

**Please complete this template with the courses you have taken thus far and those that you would need to take to complete this major. (practice copy)**

- ☐ Would your schedule also fulfill the requirements for a Biology Major?  
☐ Would your schedule also fulfill the requirements for a Psychology Major?

**Freshman year**

First Semester	units	Second Semester	units
Hum 110	1.5	Hum 110	1.5

**Sophomore year**

First Semester	units	Second Semester	units

**Junior year**

First Semester	units	Second Semester	units

**Senior year**

First Semester	units	Second Semester	units

Expected month/year of graduation: \_\_\_\_\_

**Total Units**

\_\_\_\_\_

Please complete this template with the courses you have taken thus far and those that you would need to take to complete this major.

**Complete this form before meeting with your faculty advisors**

- ☐ Would your schedule also fulfill the requirements for a Biology Major?  
☐ Would your schedule also fulfill the requirements for a Psychology Major?

**Freshman year**

First Semester	units	Second Semester	units
Hum 110	1.5	Hum 110	1.5

**Sophomore year**

First Semester	units	Second Semester	units

**Junior year**

First Semester	units	Second Semester	units

**Senior year**

First Semester	units	Second Semester	units

Expected month/year of graduation: \_\_\_\_\_

**Total Units**

\_\_\_\_\_