

# BIOLOGY <http://biology.duke.edu/undergrad>

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First-year students can explore biology with first-year seminars (Biology 89S courses); biology courses numbered < 199 do not count toward the biology major but are often a great way for students to explore their interest in biology. There are three introductory courses in biology: Biology 199, Biology 201L, and Biology 202L.

There are the two introductory "gateway" courses into biology. They can be taken in any order:

Biology 201L	Molecular Biology	requires Chemistry AP 4 or 5, or Chem 101DL*
Biology 202L	Genetics and Evolution	no prerequisite

\*Pre-requisites are enforced at registration

Prospective biology majors must take both. *AP credit will not place students out of them.*

Another gateway option for students who haven't taken AP Biology is Biology 199 (*Introduction to Biological Thinking*). It is designed *specifically* for students who have not taken AP biology and who have SAT math scores below 650 or ACT math scores less than 26. Students with AP bio scores of 3 or less are also recommended to take BIO 199D prior to taking 201L or 202L. This course counts as an elective for the Biology major or minor, and will provide a framework for understanding biology and will give students the strong foundation needed for future biology courses at Duke.

## NOTES ABOUT COMMON SITUATIONS:

Typically, there are few seats available in Biology 201L and 202L for the fall semester – that's OK. Prospective Biology majors do not need to take them in the fall and should focus on getting on track with their math, chemistry, and foreign language requirements.

Biology courses numbered <200 do not count toward the biology major but are often a great way for students to explore their interest in biology. For example, students can explore biology with first-year seminars (89S courses).

Students who have a strong Biology background (AP credit) and an interest in Marine Science might consider Fall enrollment in Biology 205, Marine Megafauna. Fifteen seats are being reserved in the course for the first year students, and the class will count as an elective towards a Biology major or minor.

Prehealth students should expect to take both gateway courses, since the material will be on the MCAT. However, they typically start with Chemistry & Calculus in the fall, and then enroll in Biology 201L or 202L in the spring — or in the fall of their sophomore year. *This is acceptable even for students who plan to major in biology.*

Students planning to major in chemistry, biophysics, neuroscience, psychology, and evolutionary anthropology may need to complete one or both – for the latest updates, check the website for a particular major.

# CHEMISTRY <http://chem.duke.edu/undergraduate/incoming-students>

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No AP credit, SATm < 630 or < 1 year high school chemistry	>>> enroll Chem 99D*
No AP credit, SATm > 630 and 1 year high school chemistry	>>> enroll Chem 101DL
AP score 3 or less, SATm > 630 and 1 year high school chemistry	>>> enroll Chem 101DL
AP score 4 (AP credit for Chem 20)	>>> enroll Chem 110DL**, but 101DL is also OK (Chem 99D isn't OK)
AP score 5 (AP credit for Chem 21)	>>> enroll Chem 201DL***, but 110DL is also OK but NOT Chem 101DL in the fall

\*Chem 99D is only taught in the fall; if a student places into Chem 99D and Math 105L but only wants to take one of these this fall, we recommend taking chemistry and postponing math to the spring.

\*\*Chem 110DL is only taught in the fall; if a student postpones chemistry until the spring, s/he will enroll in Chem 101DL.

\*\*\*Chem 201DL.002 Organic chemistry is a section reserved *only for first-year students* and is taught *only in the fall*. Students with AP Chem 5 who begin chemistry in the spring will go into regular Chem 201DL.

NOTE THAT: Professor MacPhail will monitor the placement/registration of first-year students. Students who register for a class that doesn't fit their placement may be contacted by Professor MacPhail and asked to switch.

## NOTES ABOUT COMMON SITUATIONS:

1. **PREHEALTH STUDENTS:** Chemistry sequences for Prehealth students are:

	99-101-201-202-210	and Biochem 301
	101-201-202-210	and Biochem 301
AP Chem 20 and	110-201-202	and Biochem 301
AP Chem 21 and	110-201-202	and Biochem 301
AP Chem 21 and	201-202	and Biochem 301 (and possibly Chem 210D – have student check with prehealth advisor)

If a student has AP credit for CHEM 20 but takes CHEM 99D, s/he will lose the AP credit for Chem 20.

2. **SWITCHING LEVELS AFTER THE DROP/ADD PERIOD:** There is a special provision in Chem 101DL, 110DL and 201DL whereby students can take the first exam and if there are problems, the student can **petition to drop** back to a lesser level (201DL to 110DL, 110DL to 101DL, 101DL to 99D) if it fits in their schedule. This process is overseen by Professor Chris Roy. Instructors for these classes have been asked to describe the policy in their syllabi, as follows: Students must contact Professor Roy ([croy@chem.duke.edu](mailto:croy@chem.duke.edu)) within 2 day of getting back their first exam, **petitioning to switch levels**. While there is no specified date for giving the first exam, typically the first exam is around the end of September/beginning of October. **STUDENTS MUST HAVE ROOM IN THEIR SCHEDULE FOR THE SWITCH – THEY CAN'T ADJUST OTHER COURSES TO ACCOMMODATE THIS PROVISION.** Note that students can “drop back,” but they cannot “switch up” to a higher level class.

# ECONOMICS

<http://econ.duke.edu/undergraduate>

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Typical sequence is: Econ 101 →→ 201D →→ 205D →→ 210D

No AP credit	>>> enroll Econ 101
AP Macroeconomics (score 4/5) = Econ 21 on transcript	>>> enroll Econ 101
AP Microeconomics (score 4/5) = Econ 22 on transcript	>>> enroll Econ 101
AP Macro and Micro (Econ 21, 22 on transcript) or IPC/PMC credit for Econ 101 and AP/IPC/PMC credit for Math 21/122	>>> enroll Econ 201D*

\*Econ 201D has 2 *enforced* prerequisites: Economics & Math

- AP Economics 4 or 5 (credit for Econ 21 and 22) *or* IPC/PMC credit for Econ 101
- Calculus AB 5, Calculus BC 3 (credit for Math 21) *or* IPC/PMC credit for Math 122

Econ 208 (econometrics) should be taken within the first two years. **This is a change from previous years;** we used to require Econ 201 as a prerequisite, but that is no longer the case. Prerequisites for Econ 208 are now Econ 101 (*aka* AP Economics 4/5 on Macro & Micro) *and* Mathematics 112L, 122L, 202, 212, or higher; and Statistics 111, 130, 230, or 250 or Mathematics 230 or 342.

First-year students who wish to enroll in Econ 201D and who have an advanced math background but lack the prerequisite credits can consult with the Director of First-Year Instruction in the Mathematics Department. S/he can determine whether an equivalent placement is possible and communicate that to the Economics DUS. Ultimately, it is up to the discretion of the Economics DUS whether to allow the student in the class.

Questions on economics courses, placement or the major should be directed to:

Ecoteach Center  
138 Social Sciences  
<http://econ.duke.edu/undergraduate>  
phone: 919-660-1881  
email: [dus\\_asst@econ.duke.edu](mailto:dus_asst@econ.duke.edu)

# MATH

[http://www.math.duke.edu/first\\_year/](http://www.math.duke.edu/first_year/)

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No AP credit	>>> don't enroll this fall (SATm < 520; ACTm < 22) >>> Math 105L (SATm 520-670; ACTm 22-27) >>> Math 111L (SATm 680-800; ACTm 30-36)
AP credit Math 21 (5 on AB, 4 on BC)	>>> Math 122L (fall) or Math 112L (spring) (SATm 680-800)  >>> consider Math 111L if student feels s/he needs to repeat material, or if SATm < 680*
AP credit Math 21, 22 (5 on BC)	>>> Math 212** (physics, chemistry, other majors) >>> Math 202** (econ major) >>> Math 221 (math major) (then Math 222 in spring)
AP credit, but wants to take calculus again	
AP credit Math 21	>>> Enroll in Math 111L*
AP credit Math 21, 22	>>> Enroll in Math 122L*
Took calculus, but not the AP exam	>>> Math 111L or 122L
For placement purposes, we are using equivalences as follows:	
SAT 520 = ACT 22	
SAT 680 = ACT 30	
SAT 700 = ACT 32	
SAT 800 = ACT 36	

So, for example, the guidelines in the "No AP credit" section at the top of the math page might be edited as:

don't enroll this Fall    SAT math < 520, ACT math < 22

Math 105                      SAT math 520-670, ACT math 22-29                      Math 111L                      SAT math 680-800, ACT math 30-36

\* Students with AP credit for Math 21 and who enroll in Math 111L will lose their AP *credit*, although AP *scores* will still be listed in their academic record. Students with AP credit for Math 21, 22 and who enroll in Math 122L will lose the AP credit for Math 22.

\*\* Math 202 and Math 212 require credit for second semester calculus on your Duke record in order to enroll. Be sure that Math 22 (or Math 122) is on your record to ensure that you will be able to enroll. If it is not, you should contact the Registrar's Office.

## NOTES ABOUT COMMON SITUATIONS:

1. Many students assume that they have to take calculus in college – **but this is not the case**. As part of their GenEd requirements, Trinity students must pass 2 QS-coded courses: ONE of which must be from math, statistics, or computer science.
2. Students who don't feel confident about math and aren't sure they will need calculus for their major can postpone making a decision about calculus until spring registration. Waiting until they've transitioned to college and strengthened their study habits can be a terrific idea. If they do take calculus in the spring, they would enroll in either Math 105L, 111L, or Math 112L (122L is not taught in the spring). Check specific major websites to see if calculus is required for a particular major.
3. Students who aren't sure whether they should take the 105L/106L sequence or Math 111L should go ahead and register according to the placement guidelines above. They will have the opportunity to take a diagnostic quiz on the first day of class in both Math 105L and Math 111L.
4. Students with AP credit for Math 21 (Calculus 1) and who continue math this fall should enroll in Math 122L. *They will NOT be allowed to enrolled in Math 112L, which in the fall is intended ONLY for students who took Calculus I at*

*Duke (via MATH 105L/106L or via MATH 111L).* In the spring, the situation changes, and MATH 112L is open to all students who have any form of Calculus I credit – via AP credit for Math 21, via having completed Calculus 1 at Duke, or via accepted transfer credit.

5. The math department has very clear guidelines about switching to lower/higher sections after the first week of classes. Briefly, **students are unlikely to receive a permission number to add after the first week of classes** – note that this policy DIFFERS from that in Chemistry. For details, read here: <http://math.duke.edu/courses/enrollment-policies> (particularly beginning with the sections titled, “After waitlists are erased” and “changing classes”).
6. Prehealth students typically should have the equivalent of one semester of calculus, which often can be fulfilled by AP credit for Math 21, enrollment in Math 111L, completion of both Math 105L *and* 106L, or transfer credit for Math 121. These satisfy the minimum pre-reqs for Physics 141L, 142L and if the student adds a semester of statistics, it should fulfill nearly all med school requirements. Currently, most med schools that require math have accepted AP credit, but students will need to check their target school websites in their sophomore or junior year, to be sure AND with the Office of Prehealth Advising. *E.g.*, there is at least one medical school (UCLA in California) that does not accept AP credit. They could wait until junior year to see if a calculus course is really required, and if so, they might take it at another university, during the summer, or in their junior or senior year. For more details on prehealth requirements and math, see the Prehealth Guide for First Year Students at: <http://advising.duke.edu/first>. **Always refer to a prehealth advisor if you’re unsure of the right response.**
7. Some students have AP credit for Math 21 & 22, but are reluctant to go up to Math 202 or 212. This is particularly true for students who took AP Calculus during their high school sophomore or junior year and think they might have forgotten everything. These students can choose to:
  - (a) Enroll in Math 122L this fall. This will offer a good review and acclimatize students to how math is taught at Duke; it is a good choice for students who feel fairly confident that they will choose a major that requires advanced calculus. REMEMBER that the AP *credit* for Math 22 will be lost.
  - (b) Postpone a decision until spring. This is a good choice for students who don’t know if they’ll need calculus, as it gives them a chance to explore, think about it, and determine what s/he really needs.
  - (c) Self-review and go into 200 level math (this tends not to work very well).
8. Some majors at Duke require math (and other quantitative reasoning courses). As of May 2013 (course numbers separated by / indicates a choice among courses):

Biology (AB degree)	105&106/Math 111L/(AP Math 21)
Biology (BS degree)	112L/122L/(AP Math 22) or Statistics 102 or Biology 204
Biophysics (AB degree)	112L/122L/(AP Math 22) and Math 212
Biophysics (BS degree)	112L/122L/(AP Math 22) and Math 212, 216
Chemistry (AB degree)	112L/122L/(AP Math 22)
Chemistry (BS degree)	112L/122L/(AP Math 22) and (for a limited number of BS Chem tracks) Math 212
Computer Science (AB degree)	112L/122L/(AP Math 22)
Computer Science (BS degree)	112L/122L/(AP Math 22) and STA 111 or higher and Math 202/216/221
Economics (AB degree)	112L/122L/(AP Math 22) and Math 202/212/202 and STA 111/230/130/250
Economics (BS degree)	112L/122L/(AP Math 22) and Math 202/212/222 and STA 111/230/130/250
Evolutionary Anthropology (BS)	111L and statistics
Neuroscience (AB degree)	105&106/Math 111L/(AP Math 21) and STA 101/102/111/130 or PSY 201
Neuroscience (BS degree)	112L/122L/(AP Math 22) and STA 101/102/111/130 or PSY 201
Physics (AB degree)	112L/122L/(AP Math 22) and Math 212 and Math 221 (356 is also recommended)
Physics (BS degree)	112L/122L/(AP Math 22) and Math 212 and Math 221 and Math 356
Psychology (AB degree)	PSY 201 (statistics) or STA 101/102/111/250 or Math 342
Psychology (BS degree)	AB requirements listed above and 112L/122L/(AP Math 22)/STA210/STA 34

MATH  
PLACEMENT  
OPEN  
HOUSE

Saturday before the start of  
classes, 9:00 am-noon  
Room

# NEUROSCIENCE

<http://www.dibs.duke.edu/education/undergraduate-neuroscience>

Questions? Before 1 July, contact: Prof. Christina Williams, DUS Neuroscience, [williams@psych.duke.edu](mailto:williams@psych.duke.edu)

After 1 July, contact: Prof. Jenni Groh, incoming DUS Neuroscience, [jmgroh@duke.edu](mailto:jmgroh@duke.edu)

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- All students interested in Neuroscience should start with NEUROSCI 101 (which is also cross-listed as PSY 106).  
**There is a special section reserved for first-year students.** The lecture is NEUROSCI 101-002/PSY 106-002 and the discussion section for the class is NEUROSCI 101-07D. Students should register for Discussion Section 07D, and the lecture registration will be automatic. The instructor of both lecture and discussion is Prof. Minna Ng. Students must take both together.

**\*\*IMPORTANT NOTE:** Lecture 01 with Discussion sections 1-6 of this class are currently full with sophomores, juniors and seniors. A seat may open but first-year students should note that Sections 1-6 are 140-seat lectures with just upper class students. We strongly urge first year students to register for SECTION 07 (as above) — this will place them in a 35-student lecture/discussion class with just first-year students.

- Focus courses that will count as electives in Neuroscience:  
NEUROSCI 116FS-01 — Neuroscience/Human Language with Prof. Edna Andrews  
NEUROSCI 193FS-01 – Neurobiology of Mind with Prof. Bill Hall
- STA 101/102/111/130 or PSY 201 is a Neuroscience major requirement

## Co-requisites for the Neuroscience major

- Biology co-requisite:  
BIO 201 *or* BIO 202 (we strongly recommend 201)
- Chemistry and Computer Programming co-requisite in the major:  
CHEM 101/CHEM 110/AP credit for “Chem 20” *and* CHEM 201/AP credit for “Chem 21”  
*Or*  
CHEM 101/CHEM 110/AP EQUIVALENT *and* COMPSCI 101/EGR 103L/NEUROSCI 503
- Math co-requisite in the major:  
Neuroscience (AB degree)                      Math 105&106/Math 111L/(AP Math 21)  
Neuroscience (BS degree)                      Math 112L/122L/(AP Math 22)

## NOTES ABOUT COMMON SITUATIONS:

1. Even with the first-year-only **NEUROSCI 101-002/Discussion section 7D** (35 seats), there still may not be enough seats for all entering first-year students. Please assure incoming students that this is fine and that they will be able to get into the class in Spring 2016. There will be 140 available seats, and for the past 2 years we’ve had room for all first-year students who wish to take the course.
2. First year students interested in Neuroscience should NOT be taking 200-level Neuroscience classes (or higher) without having first taken NEUROSCI 101/PSY 106. This is confusing because many NEUROSCI classes are also cross-listed in PSYCHOLOGY and may not have enforced prerequisites. For example, they should NOT take NEUROSCI 277/PSY 277. Instead, they might take PSY 101 – a good class for prehealth students. It does not count for a Neuroscience major, but it is great background. Alternately, tell them to get started with the co-requisites listed above.
3. Students starting with a Focus class in Neuroscience will still need to take NEUROSCI 101 for the major. Only 1 NEUROSCI Focus class will count in the major, even if 2 are taken. Focus classes in the Neuroscience and Law *and* Exploring the Mind clusters that do not have a NEUROSCI cross listing will not count for the major.

# PHYSICS

<http://www.phy.duke.edu/undergraduate--study>

Questions? Contact: Prof. Kate Scholberg, DUS Physics, [schol@phy.duke.edu](mailto:schol@phy.duke.edu)

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Phy 141, 142	for life science and prehealth students, <i>but not</i> physics or engineering students*
Phy 151, 152, 153	for engineering students
Phy 161/161L, 162/162L	for prospective physics majors and biophysics majors who have a solid understanding of AP Calculus BC. 161L and 162L are separate ½ credit lab courses.

NOTE: students taking the above courses **must also enroll concurrently in the respective recitation/discussion & lab** (denoted variously in ACES with the suffixes L, L9, D, L9D, etc.). Details for each course and requirements for its recitation/discussion/lab sections are listed in the course descriptions in ACES.

\*Students who have strong backgrounds in math, who are considering math-focused majors such as economics, computer science, math, or statistics, and who wish to take physics may prefer to enroll in Physics 161/161L/162/162L rather than 141/142, as the former sequence uses math at a more challenging level and will cover interesting connections between physics and math. However, note that this sequence now incorporates ½-credit lab courses separate from the lecture courses.

**PHYSICS 141:** This course does not require prior knowledge of physics *but does require* a working knowledge of high school mathematics and an elementary knowledge of calculus; Math 21/111L is a firm prerequisite and Math 22/112L is strongly recommended. About 70% of the students in Physics 141 will be juniors who have already completed Duke classes in biology, chemistry, and math. Note also that Physics 141, with its lectures, recitations, labs, and homework, is a demanding course, so students should avoid taking this course with too many other demanding courses in the same semester. Starting in the Fall 2015 semester, it will have a moderately modified content incorporating more material related to biological applications (although the core material is unchanged).

**PHYSICS 151:** Designed for Pratt students. It covers similar core materials to 141 but is oriented more towards students with interest in engineering applications.

**PHYSICS 161:** Students who are prospective physics or biophysics majors should enroll in Physics 161 and 161L. Note that Math 21/111L and 22/112L are firm prerequisites. A prior course in physics is not needed but will be helpful. Under limited conditions, students can co-enroll in Physics 161 and Calculus II (Math 122L). Those conditions are:

- AP credit for Math 21 but not Math 22 (*i.e.*, Calculus AB 5 or Calculus BC 3), AND
- Strong high school record in math (*e.g.*, grades of A in high school math courses or a 750 or higher in the Math SAT II exam), AND
- Self-reported strong confidence in math/quantitative reasoning.

Note on 161L and 162L: These are new, separate ½-credit lab courses now, decoupled from the 161 and 162 lecture-only courses. They are designed to prepare students for future research experiences. Students enrolling in 161 must also take 161L (and similarly for 162 and 162L) in order to satisfy physics/biophysics major requirements (and presumably to satisfy requirements for majors requiring an intro physics course with an accompanying lab). However, 161L need not be taken concurrently with 161 and 162L need not be taken concurrently with 162. 161L is a firm prerequisite for 162L. Both 161L and 162L are offered each semester.

Note that 2016/2017 is a transition year and the offerings will not be the usual ones. The most significant changes affect prospective Physics majors, as moving forward 161 and 264L will be offered in the spring and 162 in the fall (in 2016/2017, 162 will not be offered and 264L will be offered in both spring and fall. 161L and 162L will both be offered each semester.) Details are here: <https://www.phy.duke.edu/changes-physics-major-sequence-academic-year-20162017>

**PHYSICS 160** ("Frontiers of 21st Century Physics"): This is a new course requiring only high school math (coded NS, QS) offered for the first time in fall 2016. This course is recommended for students considering a Physics or Biophysics major, as well as others interested in learning about exciting research questions in physics.

**OTHER PHYSICS COURSES:** First-year students who are curious about physics and who want to take a fun and rewarding science course during the first year (fall or spring) should consider the 100-level courses for non-majors. The courses are quite general and do not require prior knowledge or experience with physics or calculus. See above note on Physics 160.

Quick reference on: PLACEMENT (Academic Year 2015-16)

**TRANSFER CREDIT:** Students looking for transfer credit for introductory physics courses can find detailed instructions on this website: <http://www.phy.duke.edu/transfer-credits> An FAQ is available here: <http://www.phy.duke.edu/transfer-credit-faq>

**Other classes?** Professor Scholberg recommends that students interested in physics consider taking COMPSCI 101 early, preferably by the end of the first year, since it opens up research opportunities if a student can program.

For questions and advice, contact Dr. Kate Scholberg, DUS in Physics: [schol@phy.duke.edu](mailto:schol@phy.duke.edu) 919-660-2548. For questions about biophysics, contact Dr. John Mercer, the Associate Director of Undergraduate Studies, [adus@phy.duke.edu](mailto:adus@phy.duke.edu).

# STATISTICS <https://stat.duke.edu/courses/placement-statistics-courses>

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For the most common statistics courses – STA 101 & STA 102 – there is no placement. Students can register freely. (Note: This is a change from previous years.) STA 111 requires previous calculus.

STA 101: Introductory statistics, with emphasis on social sciences

STA 102: Introductory statistics, with emphasis on life sciences (and premed)

STA 111: Introductory statistics for Economics majors. Requires calculus 1 pre-req (Math 105&106/Math 111/AP Math 21)

Course descriptions for all statistics courses, including pre-reqs, are here: <https://stat.duke.edu/undergraduate-program/undergraduate-courses>

## NOTES ABOUT COMMON SITUATIONS:

1. Prehealth students: Statistics is now on the MCAT. Some medical schools and other prehealth professions *require* statistics, and many more *recommend* it. For these reasons, the Prehealth Advising Office recommends that prehealth students take a statistics course at Duke. STA 101 and 102 will always fulfill this requirement, but other courses may as well. Encourage students to consult with their prehealth advisor for more information.
2. Students interested in majoring in statistics can learn about recommended pathways here: <https://stat.duke.edu/undergraduate-program/pathways>
3. Departments other than Statistical Sciences teach statistics courses. These department-specific courses are often research methods specific to the major. They typically fulfill the requirement for that major, but may or may not for majors in other departments. Encourage students who are taking statistics with a specific major in mind to read the requirements for that particular major.
4. Some majors at Duke require statistics, or sometimes allow statistics in lieu of calculus. They are:

Biology (BS degree)	MATH 112L/122L/(AP Math 22) <i>or</i> STA 102 <i>or</i> Biology 204
Biophysics (AB degree)	Recommend STA 130 <i>or</i> 102
Biophysics (BS degree)	Recommend STA 130 <i>or</i> 102
Computer Science (BS degree)	STA 111 <i>or</i> higher
Economics (AB degree)	STA 111/230/130/250
Economics (BS degree)	STA 111/230/130/250
Env Sciences/Policy (AB)	Any course listed in major: <a href="https://nicholas.duke.edu/programs/degrees">https://nicholas.duke.edu/programs/degrees</a>
Environmental Sciences (BS)	Any course listed in major: <a href="https://nicholas.duke.edu/programs/degrees">https://nicholas.duke.edu/programs/degrees</a>
Evolutionary Anthropology (BS)	Introductory statistics, typically STA 101 <i>or</i> 102
Global Health co-major (AB)	Any statistics course (in Statistics department <i>or</i> in the co-major)
Neuroscience (AB degree)	STA 101/102/111/130 <i>or</i> PSY 201
Neuroscience (BS degree)	STA 101/102/111/130 <i>or</i> PSY 201
Political Science (AB degree)	STA 101
Psychology (AB degree)	PSY 201 <i>or</i> STA 101/102/111/250 <i>or</i> Math 342
Psychology (BS degree)	Psychology AB requirements listed above <i>and</i> STA210/STA 340
Public Policy (AB degree)	STA 101 <i>or</i> other approved equivalent
Sociology (AB degree)	SOC 333

As always, some exceptions may apply. Encourage a student to contact the DUS to determine whether a department will accept other courses to meet a statistics requirement in a major BEFORE taking the course.