

Independent Study Policies

Program in Biology // Undergraduate Program in Neuroscience

☑: Isa-biology-independentstudy@umich.edu ⑥: 734-763-7984

What is Independent Research?

- Independent research is defined as a lab, field, or modeling project in which the student will have a say in the design, carrying out, and interpretation of experiments.
- It is expected that the student will meet regularly with their sponsor and will also gain exposure to the scientific literature of the field.
- It is recognized that many research projects will begin with a semester during which the student is mainly learning experimental techniques. Experiences that are strictly technical are not eligible for independent research credit, but it is appropriate for the student to receive credit for independent research during a term they are mainly learning techniques, as long as the project is structured in a way that will eventually lead to independence.
- Projects involving human subjects or patient records usually are not appropriate for an EEB/MCDB 300 or 400 election.

What is BIOLOGY 299?

- BIOLOGY 299 is intended only for Biology, Health, & Society (BHS) majors who want to pursue interdisciplinary research (i.e., on a theme incorporating research outside of traditional biology lab work).
- Students will need to conduct original research on an approved topic related to health and/or society and its impacts on or interactions with biology. Literature surveys or reviews are not eligible.
- Approved BHS interdisciplinary (BHS-ID) research students who work with faculty outside of EEB and MCDB will be supervised (co-sponsored) by the BHS student research committee (composed of EEB/MCDB faculty).
- BHS majors pursuing traditional biology research in a biology lab should follow the standard research path (i.e., BIOLOGY 200 and/or EEB/MCDB 300/400).

I'm a Neuroscience major, which course(s) should I elect?

- Students conducting independent research on topics in neuroscience with **approved neuroscience faculty**, should elect NEURO 360 or 460 [see neuro. faculty list on UPiN website].
- Students who are researching in MCDB labs on topics related to molecular, cellular, and/or developmental biology should register for the MCDB 300/400 track.
- Students researching in psychology labs should follow up with the department of Psychology to choose the appropriate courses.
- Any student completing a neuroscience thesis should register for NEURO 461 during the term he/she is
 writing and submitting the thesis. (Students should also be registered for NEURO 460 unless all lab work has
 already been completed before the start of the semester.)

What if my Faculty Sponsor is not an EEB or MCDB faculty member?

- A student wishing to receive credit toward their major for research done under the direction of a faculty
 member in another department or unit of the University must obtain approval from a faculty member in the
 Department of EEB or MCDB, who agrees to serve as co-sponsor before beginning the project. [see more
 information about eligible sponsors/co-sponsors].
- A prospective co-sponsor will verify that the proposed research meets all of the criteria required of research carried out within the Department of EEB or MCDB.
- The faculty co-sponsor will review the research proposal and decide the appropriateness of the research. The co-sponsor will also confirm that the project is biological in nature, that it will help the student develop independence and is not simply a technical training exercise. (Note: Microbiology majors who elect to take MICRBIOL 399 do not need to find a co-sponsor, nor does a Neuroscience major who elects to take Psych independent study elections).
- Research must be conducted on the U-M Ann Arbor Campus or its properties with a UM research-active faculty member. (In rare instances, exceptions to this rule will be considered by the Bio. Committee.)

Can I take an undergraduate research course offered in a different department?

- If an external unit or department offers its own undergraduate research course, the student may elect it instead of EEB or MCDB 300 or 400. However, to be eligible for major credit, the project must be cosponsored (as described above). If this option is chosen, the course may count as a cognate course for those majors that accept cognate courses as part of the major. (See individual major requirements.)
- Note that, per LS&A policy: Candidates for an A.B., B.S., or B.G.S. degree must complete a minimum 100 credits of LSA courses, allowing 20 credits of non-LSA course work in the minimum 120 required for the degree. Non-LSA credits in excess of 20 will be included in the calculation of a student's GPA, but will not be counted toward the 120 credits needed for a Bachelor's degree in LSA.

Can I take the course pass/fall?

All research courses that will be used as part of a major must be assigned letter grades.

Which course can I take?

Course	Prerequisites:			
BIOLOGY 200	None			
BIOLOGY 299	Interdisciplinary topic,* declared BHS Major, 8 or more BIO course credits			
EEB or MCDB 300	8 or more BIO course credits			
EEB or MCDB 400	12 or more BIO course credits, EEB/MCDB 300			
NEURO 360	PSYCH 230 or BIOLOGY 222 or MCDB 322 or BIOLOGY 225; declared Neuro. major			
NEURO 460	MCDB 300 or NEURO 360 or PSYCH 326 or PSYCH 331; declared Neuro. major			
NEURO 461	Will be submitting a neuroscience senior thesis (honors or non-honors) during the semester.			
	Student should also be registered for NEURO 460 or Psychology 422 unless all lab work has			
	already been completed before the start of the semester.			

^{*}Approved BHS interdisciplinary (BHS-ID) research students who wish to take BIOLOGY 299 for work with faculty outside of EEB and MCDB must be supervised (co-sponsored) by a member of the BHS student research committee (composed of EEB/MCDB faculty). Contact lsa-biology-independentstudy@umich.edu with questions.

Can I repeat the course?

Course	Max Credit Hours	Note that maximum of 3 credits will	College of LS&A Policies: A combined
BIOL 200	up to 6 credit hours	be applied toward the major (with the	total of 30 credits of Experiential and
BIOL 299	up to 12 credits	exception of the EEB major which	Directed Reading/Independent Study
EEB 300	up to 9 credits	allows 6)	courses may be counted in the 120
EEB 400	up to 9 credits		credits required for a degree.
MCDB 300	up to 9 credits	If a student elects to take more than	Experiential and Independent Study
MCDB 400	up to 9 credits	the major-approved number of	courses are excluded from area
NEURO 360	up to 9 credits	credits of independent research, the	distribution plans.
NEURO 460	up to 9 credits	extra credits will count towards the student's general pool of 120 credits required to graduate from LS&A.	(https://lsa.umich.edu/lsa/academics/lsa-academic-policies/credit-limits.html)
NEURO 461	cannot be repeated		

How many credits will count toward my major?

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Major	Max. Credits	Courses Eligible				
Biology	3	BIOLOGY 200 or EEB/MCDB 300 or 400				
Biology, Health, & Society (BHS)	3	BIOLOGY 200, 299, or EEB/MCDB 300 or 400				
Plant Biology	3	EEB/MCDB 300 or 400				
CMBS / MCDB	3	MCDB 400				
Microbiology	3	EEB/MCDB 400, MICRBIOL 399, EPID 399, or INTMED 499 (2 nd term)				
EEB 6		BIOLOGY 200, or EEB/MCDB 300 or 400				
Neuroscience 3		MCDB 300, 400, NEURO 360, 460, 461, or appropriate PSYCH course				

What major requirements will the experience fulfill?

Course Options	Credit Election	Major	Requirement
BIOLOGY 200	1-3	Biology, EEB	Additional Elective
BIOLOGY 299	1-3	BHS	Additional Elective
		BHS, Plant Biology	Lab
	3	Biology	Lab, Upper-Level Elective
		EEB	Lab, Research Experience
EEB/MCDB 300 or 400	1 or 2	Biology, BHS, Plant Bio., EEB	Additional Elective
MCDB 400	3	CMBS / MCDB	Adv. Lab or Adv. Course
EEB/MCDB 400, MICRBIOL 399, EPID 399, or INTMED 499 (2 nd term)	3	Microbiology	Additional Elective
MCDB 300, 400, NEURO 360, 460, or PSYCH option	2-3*	Neuroscience	Lab

^{*} A student who elects MCDB 300/400 or NEURO 360/460 has the option of taking 2 credits to fulfill the requirement; otherwise the student must take 3 credits from one of the approved PSYCH courses.

Credit Guidelines:

Working on a research project typically includes time spent in the lab (or in the field for many EEB projects), time at lab meetings and research seminars, and time outside the lab spent on reading papers and doing data analysis. Students should expect to spend <u>4-5 hours per week</u> over the semester working on the project per registered credit hour.

Questions about your Lab or Research?

Contact the Program in Biology (<u>Isa-biology-independentstudy@umich.edu</u>) at any time with questions or concerns about your research, including issues with your sponsor, work hours, or research topics.

Drop-in questions in 2200 BSB are always welcome.