

M.S. in Entomology

The graduate program in Entomology at Montana State University leads to a Master of Science degree. Students in the program are required to take formal course work and conduct independent research guided by the student's advisory committee. Each student, during the course of their graduate program, will also have the opportunity to participate in activities outside their degree program that will benefit them academically and professionally. Such activities include participating in teaching, outreach and international programs, and attending and presenting research results at professional meetings. Each student is strongly encouraged to take advantage of these opportunities. A student's individual program can be designed, with approval of the graduate advisor and graduate committee, to suit the student's individual interests and career goals.

The entomology faculty at MSU conduct research in a variety of disciplines, including behavioral ecology, biodiversity studies, biological control of insects and weeds, biosystematics, chemical ecology, ecology, integrated pest management, pollination ecology, risk assessment, stored-product entomology, insect protein, thermal biology, molecular biology and cultural entomology. Entomological research at MSU includes some of the most important pests in the western U.S., including alfalfa weevil, aphids, cutworms, grasshoppers, Hessian fly, lygus bugs, wheat-stem sawfly, wireworms and others. Beneficial insects under study include various biological control agents and pollinators. Most faculty conduct both applied and basic research.

Admission Standards and Process

An entering student is expected to have a solid background in the basic sciences and a B.S. or B.A. in biological or related sciences. They are expected to present evidence of college level training and mastery in biology, chemistry and mathematics sufficient to provide a good background for further study at the advanced level. Students with deficiencies may be required to take background courses to make up these deficiencies before or after being approved for acceptance.

International Applicants: An English proficiency test is required for all applicants who are not U.S. citizens and are not from countries where English is the official language. This requirement is waived if the applicant has earned an undergraduate or graduate degree from an institution in the U.S. Minimum scores required are: TOEFL [80], IELTS [level 6.5] or Duolingo [120]. For transcripts that do not show grades and GPA on a 4.00 scale, it's helpful to provide a document with grade translations.

A GPA of 3.0 for the last two years, three letters of recommendation and a letter of application describing the applicant's research interests and career goals in pursuing graduate training are minimum requirements for acceptance to the LRES graduate program.

The Department of Land Resources and Environmental Sciences hosts the application process for the M.S. in Entomology. All applications are evaluated by a review committee of tenure-track entomology faculty and the department head of the sponsoring department for final recommendation to the Dean of The Graduate School. The advisor or co-advisor must be a tenure-track entomology faculty member. Successful applicants are accepted into both the department and The Graduate School. Students will be considered as graduate students in their respective departments, but will meet the academic standards of the M.S. in Entomology.

All paperwork and other supportive functions will be the responsibility of the department in which the student has been accepted. Any programmatic

support such as space, GRA and/or GTA stipends, fee waivers, etc. will go through the usual department channels

Entomology Curriculum

A minimum of 22 semester hours of course work and at least 10 thesis credit hours are required for the degree. Students deficient in preliminary course work may be required to take additional courses for which they will not receive graduate credit (course numbers <400). A minimum of 24 credits of course work (Including not more than 10 thesis credits) must be taken from Montana State University. Courses taken outside of Entomology must constitute a unified program approved by the student's graduate committee.

Current research focuses on insect pests of agricultural importance, biological control of insects and weeds, integrated pest management, and fundamental studies in ecology, physiology, behavior, and evolution. Fieldwork is an integral part of most programs. Resources include a comprehensive insect collection, the regional Insect Quarantine Facility, and access to a state-of-the-art Plant Growth Center with glasshouse space, growth rooms, and growth chambers.

Required Courses (must be taken by all M.S. students)

BIOO 465	Insect Identification	4
ENTO 510	Insect Ecology	3
ENTO 520	Insect Physiology	3
Take 3 credits of ENTO Seminar:		3
ENTO 594	Seminar	
ENTO 590	Master's Thesis	10
STAT 511	Methods of Data Analysis I	3
STAT 512	Methods of Data Analysis II	3
Take one of the following:		3
AGSC 401	Integrated Pest Management	
ENTO 525	Insect Morphology	
Total Credits		32