MOLECULAR AND ENVIRONMENTAL TOXICOLOGY, M.S.

Molecular and environmental toxicology is a multidisciplinary subject that involves the study of mechanisms of action of environmental toxicants on humans and other organisms and the behavior of these toxicants in the environment. The UW–Madison Molecular and Environmental Toxicology Center’s graduate program provides students with expert knowledge in at least one specialty plus a broad understanding of other specialties that contribute to the resolution of environmental toxicology problems. The center is sponsored by the School of Medicine and Public Health as well as the College of Agricultural and Life Sciences, the School of Veterinary Medicine and the School of Pharmacy. The center links researchers in numerous academic departments who are working on problems in this area.

An interdisciplinary graduate program leading to the doctor of philosophy or a master of science in molecular and environmental toxicology is offered by the center under the direction of an executive committee composed of faculty affiliated with the center. The program offers two general approaches: mechanisms of pathobiology of chemically induced disease and environmental activities of chemicals. Each approach is subdivided into focal areas including metabolic and genetic toxicology, neurotoxicology, and immunotoxicology; and ecotoxicology, bioremediation, and distribution and assessment of environmental chemicals. All students participate in a core curriculum that addresses these various areas and that is supplemented by other advanced, specialized courses. Students perform research under the guidance of one of the center’s graduate faculty members.

Recipients of graduate degrees in molecular and environmental toxicology pursue careers in governmental agencies (policymaking, regulations, standard setting, or research), private industry (e.g., hazardous waste management, occupational safety, consumer affairs, research and development, or regulatory compliance), and the academic community (teaching and research). The center office maintains specific information concerning career placements.

ADMISSIONS

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table on the program’s website. Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency) of the Graduate School as well as the program(s).

Please research the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/), and review the requirements listed below. Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table on the program’s website. Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements of the Graduate School as well as the program(s).

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>December 1</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>The program does not admit in the spring</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>The program does not admit in the summer</td>
</tr>
</tbody>
</table>

GRE (Graduate Record Examinations) Not required but may be considered if available.

English Proficiency Test Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).

Other Test(s) (e.g., GMAT, MCAT) n/a

Letters of Recommendation Required

3

To qualify for graduate study in molecular and environmental toxicology, applicants normally have a bachelor’s degree in a biological or physical science, with at least a 3.0 GPA (on a 4.0 scale). The following courses should be completed before entrance to the program: four semesters of chemistry, including at least one of organic (depending on the planned direction within the program, a semester of either analytical chemistry or biochemistry is highly recommended); one semester of math-based physics (a second semester is highly recommended); and three semesters of biology, including coverage of introductory genetics. One or more semesters of calculus is highly recommended. If applicants have not taken one semester of statistics, biometrics, or an equivalent course, and one semester of biochemistry equivalent to the UW–Madison Biochem 501 course, then these courses must be taken as part of the program and will fulfill elective credit requirements for the major. Students with a limited number of deficiencies may be admitted, but must eliminate these deficiencies early in their graduate study. Applicants are required to take the Graduate Record Exam (GRE). International students should also send scores of the Test of English as a Foreign Language (TOEFL), or International English Language Testing System (IELTS).

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

The Molecular & Environmental Toxicology Program does not guarantee funding for incoming or continuing masters students. Masters students may be eligible for research assistantships, teaching assistantships, advanced opportunity fellowships for minority or disadvantaged students, or other funding opportunities. Students are encouraged to contact individual professors in their areas of interest to determine whether support is available for working in that lab.
REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

- **Evening/Weekend**: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

- **Online**: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

- **Hybrid**: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

- **Accelerated**: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate</td>
<td>Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate</td>
<td>3.00 GPA required.</td>
</tr>
</tbody>
</table>

Other Grade Requirements

The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations

- **Students on the non-thesis track** will need to take more didactic credits to fulfill the 30 credit minimum requirement. The final examination for degree completion of the degree is a topic / literature review of toxicological relevance.

- **Students on the research / thesis track** will be able to take 990 research credits to fulfill their 30 credit minimum requirement. The final examination for degree completion is the development of a masters thesis based on the research conducted.

Language Requirements

Contact the program for information on any language requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>M&amp;ENVTOX/ MEDICINE/ ONCOLOGY/ PHM SCI/PHMCOLO-M/POP HLTH 625</td>
<td>Toxicology I</td>
<td>3</td>
</tr>
<tr>
<td>M&amp;ENVTOX/ MEDICINE/PHM SCI/PHMCOLO-M/POP HLTH 626</td>
<td>Toxicology II</td>
<td>3</td>
</tr>
<tr>
<td>M&amp;ENVTOX/ CIV ENGR/ SOIL SCI 631</td>
<td>Toxicants in the Environment: Sources, Distribution, Fate, &amp; Effects</td>
<td>3</td>
</tr>
<tr>
<td>OBS&amp;GYN 955/ SURG SCI 812</td>
<td>Responsible Conduct of Research for Biomedical Graduate Students</td>
<td>2</td>
</tr>
<tr>
<td>M&amp;ENVTOX 800</td>
<td>Seminar</td>
<td>1</td>
</tr>
<tr>
<td>M&amp;ENVTOX 801</td>
<td>Scientific Communication in Molecular &amp; Environmental Toxicology</td>
<td>2</td>
</tr>
</tbody>
</table>

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Work from Other Institutions

Prior coursework that a student wants to have considered must be presented within the first month of UW–Madison residency. Core courses may be appealed, subject to Graduate Achievement Committee
approval. Credit total of core course exemptions will need to be made up as electives. Elective credits may be appealed, subject to Graduate Achievement Committee approval; further electives will not need to be taken.

UW–Madison Undergraduate
Core courses taken as an undergraduate will not need to be retaken, commonly including POP HLTH/M&ENVTOX/MEDICINE/ONCOLOGY/PHM SCI/PHMCOL-M 625 Toxicology I and POP HLTH/M&ENVTOX/MEDICINE/PHM SCI/PHMCOL-M 626 Toxicology II from the Pharm/Tox program and M&ENVTOX/AGRONOMY/ENTOM/F&W ECOL 634 Ecotoxicology: Impacts on Populations, Communities and Ecosystems in the F&W Ecol program. Equivalent number of didactic elective credits from graduate-level courses must be taken to fulfill the previously taken credits/courses.

UW–Madison University Special
Core courses taken as a UW–Madison University Special student will not need to be taken, commonly including M&ENVTOX/MEDICINE/ONCOLOGY/PHM SCI/PHMCOL-M/POP HLTH 625 Toxicology I and M&ENVTOX/MEDICINE/PHM SCI/PHMCOL-M/POP HLTH 626 Toxicology II, as a student prepares for the toxicology program. Equivalent number of didactic elective credits from graduate-level courses must be taken to fulfill the previously taken credits/courses.

PROBATION
The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, orIncomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a review on future enrollment or in being suspended from the Graduate School.

ADVISOR / COMMITTEE
Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

A committee often accomplishes advising for the students in the early stages of their studies.

A student’s advisory committee is made up of the thesis advisor and at least two further members, based on the needs of the student and mentor.

CREDITS PER TERM ALLOWED
12 credits

TIME CONSTRAINTS
Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

GRIEVANCES AND APPEALS
These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
  - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
- Dean of Students Office (https://doso.students.wisc.edu/) (for all students to seek grievance assistance and support)
- Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

Molecular & Environmental Toxicology Grievance Policy
If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students’ concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact the advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc.). Many departments and schools/colleges have established specific procedures for handling such situations; check their web pages and published handbooks for information. If such procedures exist at the local level, these should be investigated first. For more information see the Graduate School Academic Policies & Procedures: Grievances & Appeals: grad.wisc.edu/acadpolicy/#grievancesandappeals (http://grad.wisc.edu/acadpolicy/#grievancesandappeals)

Procedures for proper accounting of student grievances:
1. Initiate a written record containing dates, times, people, and description of activities. Update this record as needed while completing additional procedures below.
2. The student is encouraged to speak first with the person toward whom the grievance is directed to see if a situation can be resolved at this level.
3. Should a satisfactory resolution not be achieved, the student should contact the program’s Grievance Advisor or Director of Graduate Study to discuss the grievance. The Grievance Advisor or Director of Graduate Study will facilitate problem resolution through informal channels and facilitate any complaints or issues of students. The first
attempt is to help students informally address the grievance prior
to any formal complaint. Students are also encouraged to talk with
their faculty advisors regarding concerns or difficulties if necessary.
University resources for sexual harassment, discrimination, disability
accommodations, and other related concerns can be found on the
UW Office of Equity and Diversity website: oed.wisc.edu/index.html
(http://oed.wisc.edu/).
4. Other campus resources include:
   • The Graduate School - grad.wisc.edu (http://grad.wisc.edu/)
   • McBurney Disability Resource Center - mcburney.wisc.edu (http://
     mcburney.wisc.edu/)
   • Employee Assistance Office - eao.wisc.edu (http://eao.wisc.edu/)
   • Ombuds Office - ombuds.wisc.edu (http://ombuds.wisc.edu/)
   • University Health Services – uhs.wisc.edu (http://uhs.wisc.edu/)
   • UW Office of Equity and Diversity - oed.wisc.edu/index.html
     (http://oed.wisc.edu/)
5. If the issue is not resolved to the student’s satisfaction the student
can submit the grievance to the Grievance Advisor in writing, within
60 calendar days of the alleged unfair treatment.
6. On receipt of a written complaint, a faculty committee will be
   convened by the Grievance Advisor to manage the grievance. The
   program faculty committee will obtain a written response from the
   person toward whom the complaint is directed. This response will be
   shared with the person filing the grievance.
7. The faculty committee will determine a decision regarding the
   grievance. The Grievance Advisor will report on the action taken by
   the committee in writing to both the student and the party toward
   whom the complaint was directed within 15 working days from the
date the complaint was received.
8. At this point, if either party (the student or the person toward whom
   the grievance is directed) is unsatisfied with the decision of the
   faculty committee, the party may file a written appeal. Either party
   has 10 working days to file a written appeal to the School/College.
9. Documentation of the grievance will be stored for at least 7 years.
   Significant grievances that set a precedent will be stored indefinitely.

The Graduate School has procedures for students wishing to appeal
a grievance decision made at the school/college level. These policies
are described in the Graduate School’s Academic Policies and
Procedures: grad.wisc.edu/acadpolicy/#grievancesandappeals (http://
grad.wisc.edu/acadpolicy/#grievancesandappeals)

OTHER
Students are funded by program dollars to do rotations during their first
semester. After having settled on a lab, their research mentor will fund
the student, either through his/her research grants, program-available TA-
ships, or other fellowships.

PROGRAM RESOURCES

PROFESSIONAL DEVELOPMENT

Professional development goes beyond what students do in the
classroom and at the bench. It includes an array of skills and knowledge
that are not often taught yet are vitally important to furthering one’s
career.

All students are required to complete the AAAS Individual Development
Plan (http://myidp.sciencecareers.org/) following their first semester
to identify strengths in their background, as well as areas where further
professional development are recommended. In addition, the program
encourages students to make use of the Graduate School’s DiscoverPD
resource (https://my.grad.wisc.edu/DiscoverPD/). Finally, students are
able to track progress through annual committee meetings, at which time
students and advisors are asked to complete an evaluation of progress
and have a frank discussion about areas for improvement.

The Molecular & Environmental Toxicology Program currently
recommends that students complete three units (hours/activities) per
semester from the professional development areas of:

• Discipline-Specific Conceptual Knowledge
• Research Skill Development
• Communication Skills
• Professionalism
• Leadership & Management Skills
• Responsible Conduct of Research (Ethics)

The program is developing a database of resources that will be available
on the program website.

LEARNING OUTCOMES

1. Demonstrate a didactic knowledge of both molecular toxicology and
   environmental toxicology.
2. Understand that science and research is based on trust—trust
   between scientists and colleagues, trust between scientists and
   policy makers, trust between scientists and advisory boards, and
   trust between scientists and society.
3. Verbally communicate their science and do so in a clear manner for
   a variety of audiences.

PEOPLE

Faculty: See Faculty (http://metc.wisc.edu/people_category/faculty/) on
program website.

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School’s professional development
resources (https://grad.wisc.edu/pd/) to build skills, thrive academically,
and launch your career.