

Western Kentucky University, Department of Physics and Astronomy, Master of Science in Homeland Security Sciences

The goal of this multidisciplinary graduate degree program in Homeland Security Sciences is to prepare science professionals and technology leaders for careers in Homeland Security, an emerging cross-cutting discipline. The program is concentrated in applications of physics, biology and chemistry to detect, quantify, prevent, and decontaminate chemical, biological, radiological, nuclear, and explosive (CBRNE) threats.

The program leads to the Master of Science degree in Homeland Security Sciences and requires a minimum of 31 semester hours beyond a Bachelor degree. The program's curriculum features a hands-on research component, which enables students to apply their training to real-world problems.

The program helps to improve the security of the nation, while preserving our values, freedoms, and economy. It supports innovative, leading-edge intra-disciplinary and inter-disciplinary research, study, and technology development, leading to practical, affordable solutions to the current and future security challenges the United States faces at home and around the world.

The program is designed to stimulate, coordinate, and utilize the unique intellectual capital in the academic community to address current and future homeland security challenges, and educate and inspire the next generation of homeland security specialists addressing the existing gap in science professionals trained in crosscutting security applications of physics, chemistry and biology.

Admission to the program requires a Bachelor's degree in Physics, Biology, Chemistry, or Engineering. The program requires a minimum of 31 semester hours beyond a Bachelor degree. The curriculum consists of a 25 credit hour core, divided into three levels; with 6 hours of electives.

Required courses:

Level 1

The 1-hour course PHYS-506 Overview of Homeland Security is required.

6 hours are required from the following courses:

PHYS-560 Introduction to Physics Applications in Homeland Security

CHEM-560 Introduction to Chemical Agents and Explosives

BIOL-550 Introduction to Biological Applications in Homeland Security

Level 2

8 credit hours required, including two of the following courses:

PHYS-570/571 Nuclear and Radiological Detection / Remediation (4 hours)

CHEM-572/573 Detection and Analysis of Chemical Agents/Explosives (4 hours)

BIOL-552/553 Biological Applications in Homeland Security I (4 hours)

Level 3

10 hours required; 6 hours for thesis writing and research and at least 4 credit hours from the following list:

- PHYS 590/591 Detection of Explosive and Chemical Threats (Lecture/Lab) (4 hours)
- CHEM-592/593 Remediation of Chemical Agents & Explosives (Lecture/Lab) (4 hours)
- EHS-572 Environmental and Occupational Epidemiology (3 hours)
- BIOL-555 Biological Applications in Homeland Security II (1 hour)

Elective courses

Elective courses are additional courses from Level 2 or 3, and courses provided by other WKU Departments: Engineering, Mathematics and Computer Science, Modern Languages, Political Science, Health, or established 500-level courses from the Departments of Physics and Astronomy, Biology, and Chemistry. Students are strongly encouraged to utilize elective courses from other Kentucky colleges and universities such as graduate courses from Eastern Kentucky University's Safety, Security and Emergency Management program

Western Kentucky University is accredited by the Southern Association of Colleges and Schools Commission on Colleges.

For more information contact:

Dr. Ivan Novikov
Graduate Director, Associate Professor
Western Kentucky University
1906 College Heights Blvd.
Bowling Green, KY 42101-1046
Phone: 270-745-4357
Email: ivan.novikov@wku.edu

Or

Dr. Mike Carini
Department Chair, Professor
Western Kentucky University
1906 College Heights Blvd.
Bowling Green, KY 42101
Phone: 270-745-4357
Email: mike.carini@wku.edu

Additional Information:

<https://www.wku.edu/physics/programs/graduate/hss/hss.php>

Update: 8/9/2018

“Please note: Some of the Web sites linked to in this document are not federal government Web sites, and may not necessarily operate under the same laws, regulations, and policies as federal Web sites.”