

# MASTER IN CHEMICAL RISK ASSESSMENT

## Program Content Outline

Courses will include problem formulation and conceptual models, consultation, and social license, environmental chemodynamics, exposure characterization and modeling, principles of toxicology, ecotoxicology and hazard determination, guidelines and benchmarks, cumulative risk assessment, risk characterization, probabilistic Ecological Risk Assessment, protocols, and national/international regulations (incl. applicable laws), and decision making and risk communication.

The MRA program is comprised of four phases of learning which includes 12 courses in total:

- 1. Problem Formulation and Historical Lessons (6 cu)**
  1. Introduction to Chemical Risk Assessment and Problem Formulation
  2. Historical Lessons in Chemical Risk Assessment
- 2. Exposure Characterization & Hazard Characterization (12 cu)**
  1. Environmental Exposure Characterization
  2. Principles of Ecotoxicological Hazard Characterization
  3. Principles of Human Exposure Characterization
  4. Principles of Human Hazard Characterization
- 3. Approaches, Tools, and Regulations (12 cu)**
  1. Approaches, Models and Tools for Characterizing Exposure and Hazard
  2. Practical Skills for Characterizing Exposome
  3. Practical Skills for Characterizing Hazard
  4. Risk Assessment and Regulatory Systems
- 4. Integration & Future Directions (6 cu)**
  1. Sustainable Chemical Risk Characterization for Decision-Making
  2. Chemical Risk Assessment Project

