

CHARTERED 
INSTITUTE OF PROFESSIONAL CERTIFICATIONS

CERTIFIED GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR ENVIRONMENTAL IMPACT, MONITORING AND RISK ASSESSMENT

**Fully Accredited
By:**

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PROGRAM OVERVIEW



Geographic Information Systems (GIS) have become essential for environmental monitoring, impact analysis, and risk assessment. **Powered by AI and IoT, GIS enables real time environmental monitoring, climate impact simulations, disaster management and pollution spread.** By enhancing disaster risk management and supporting global sustainability initiatives, GIS plays a critical role in advancing climate resilience and addressing the growing demands of the rapidly expanding environmental monitoring market.

This certified program is designed to provide you with comprehensive knowledge and practical skills to apply GIS effectively in environmental impact, monitoring, and risk assessment contexts. You will explore key concepts on **how GIS supports environmental assessment processes, risk evaluation, biodiversity conservation**, climate adaptation, and sustainable resource management. You will gain the ability to acquire and integrate diverse environmental datasets, **apply spatial analysis techniques, and use remote sensing, modeling, and visualization tools** to generate actionable insights.

Through detailed sessions, you will learn to **conduct cumulative effects assessments, model environmental risks such as floods, wildfires, and pollution**, and manage complex applications like water resource monitoring and species habitat analysis. With real-world case studies you will understand the consequences of weak GIS integration in environmental decision-making and showcase best practices from global projects.

ACCREDITATIONS



4.8



4.6



PROGRAM OVERVIEW



Furthermore, you will develop advanced **skills in visual storytelling with GIS, transforming technical outputs into clear, compelling maps and dashboards** that inform regulators, policymakers, and the public. Special emphasis will be placed on emerging practices, including stakeholder engagement, and the application of AI and machine learning in predictive environmental modeling. By the end of the program, you will have the knowledge, tools, and confidence to **apply GIS strategically for compliance, sustainability, and risk mitigation**.

Upon successful completion of the program, you will attain the **Certified Geographic Information Systems Professional (CGIS™)** designation. This globally recognized certification will validate your expertise in leveraging GIS for sustainable decision-making and regulatory compliance. It will enhance your professional credibility and demonstrate your ability to bridge the gap between technical geospatial analysis and real-world environmental and policy challenges.

ACCREDITATIONS



4.8



4.6



KEY SKILLS YOU WILL GAIN

From This Program



**ENVIRONMENTAL IMPACT ANALYSIS
SPATIAL DATA MANAGEMENT
REMOTE SENSING APPLICATIONS
GIS-BASED RISK ASSESSMENT**

**CUMULATIVE EFFECTS MODELING
WATER RESOURCE MAPPING
BIODIVERSITY MONITORING
CLIMATE CHANGE MODELING**

**DISASTER RISK MAPPING
SPATIAL DATA INTEGRATION
POLICY AND REGULATORY ALIGNMENT
STAKEHOLDER ENGAGEMENT MAPPING**

**INDIGENOUS KNOWLEDGE INTEGRATION
CARTOGRAPHIC VISUALIZATION
GEOSPATIAL DATABASE MANAGEMENT
SPATIAL QUERY TECHNIQUES
OVERLAY & BUFFER ANALYSIS**

**IOT DATA INTEGRATION
AI-ENHANCED GIS MODELING**

YOUR FACULTY DIRECTOR



Dr. Jochen Albrecht, GISP

Global Expert in Geospatial Intelligence and Environmental Risk Modeling

Dr. Jochen Albrecht, GISP, is an **internationally recognized geospatial thought leader with over three decades of experience advancing the role of GIS across three continents**. He has guided CEOs, senior executives, and policymakers in leveraging GIS as a strategic tool for environmental impact assessments, monitoring, and risk evaluation.

His expertise lies in **integrating sustainability with GIS, applying environmental impact assessments, climate change and land use modeling, transportation and migration analysis** to advance effective environmental management and strengthen resilience against global sustainability challenges. By combining rigorous qualitative and quantitative methods, Dr. Albrecht has helped organizations harness GIS for evidence-based decision-making, regulatory compliance, and long-term climate resilience.

Dr. Albrecht is the **former President of the GIS Certification Institute**, where he championed professional standards and elevated GIS as a driver of sustainable development and environmental governance worldwide. His leadership and insights continue to shape how GIS is applied to environmental monitoring, disaster preparedness, and policy innovation, ensuring that strategies are not only technologically advanced but also practical, ethical, and impactful.

OUR PARTICIPANTS

Over 70% of FORTUNE 500 Companies Have Attended Our Accredited Programs Before





PROGRAM AGENDA

MODULE 1 - THE LEGAL MANDATE - THE IMPACT ASSESSMENT ACT (IAA) AND ITS RAMIFICATIONS

- Designated Projects
- Effects Within Federal Jurisdiction
- The Impact Assessment Agency of Canada (IAAC)

MODULE 2 - THE EIA PROCESS IN PRACTICE: FROM PROJECT DESCRIPTION TO DECISION

- Planning Phase (Early Engagement)
- Impact Statement Phase
- Impact Assessment Phase
- Decision-Making and Follow-up

MODULE 3 - THE GIS TOOLBOX: CONCEPTUAL MODELS & DATA STRUCTURES

- Canadian Context
- Vector vs. Raster
- Topology, Attributes, Geodatabases, Metadata Standards (ISO 19115)

MODULE 4 - DATA DISCOVERY: NAVIGATING THE CANADIAN GEOSPATIAL DATA ECOSYSTEM

- Statistics Canada
- Environment and Climate Change Canada (ECCC)

- Natural Resources Canada (NRCan)

MODULE 5 - REMOTE SENSING & MODERN DATA ACQUISITION

- Principles of Satellite Imagery (Landsat, Sentinel)
- LiDAR, UAVs
- Image Classification Concepts

MODULE 6 - SPATIAL ANALYSIS FUNDAMENTALS

- Conceptual Overview of Core Tools
- Overlay (Intersect, Union), Proximity (Buffer), Selection (Query)

MODULE 7 - ASSESSING CUMULATIVE EFFECTS

- 5-step Framework (Scoping, Analysis, Mitigation, Significance, Follow-up)
- Valued Components (VCs)
- Habitat Suitability Modeling (HSM)
- Connectivity Analysis
- Mapping Species at Risk
- Climate Scenario Modeling

MODULE 8 - ENVIRONMENTAL RISK ASSESSMENT

- Risk Framework



PROGRAM AGENDA



- Hazard, Exposure, Dose-Response, Characterization
- Weighted Overlay Models

MODULE 9 - WATER RESOURCES & POLLUTION CONTROL

- Watershed Delineation
- Modeling Non-Point Source Pollution
- Water Quality Monitoring Networks

MODULE 10 - BIODIVERSITY & CLIMATE

- Habitat Suitability Modeling (HSM)
- Connectivity Analysis
- Mapping Species at Risk
- Climate Scenario Modeling

MODULE 11 - FROM DATA TO STORY: VISUALIZATION

- Principles of Cartography
- Visual Hierarchy
- Symbolology
- Static vs. Interactive Maps/Dashboards

MODULE 12 - GIS IN POLICY & FUTURE

- Synthesizing the EIA-GIS Workflow
- Evidence-based Policy
- Indigenous-led IA (ILIA)
- Future Trends (AI/ML)

YOUR CHARTER DESIGNATION



Chartered Institute of Professional Certifications' programs are unique as they provide you with professional charter designations and marks that can be used across your lifetime once you have completed our programs.

Upon successfully completing this program, you will earn the **Certified Geographic Information Systems Professional (CGIS™)** designation, an industry-recognized credential with lifelong validity. This globally respected certification will validate your expertise in applying GIS to environmental assessments, risk modeling, and sustainability monitoring, while demonstrating your ability to integrate complex spatial data into compliance frameworks and policy decisions. A powerful addition to your professional profile, it highlights your commitment to excellence in geospatial intelligence and sustainable development. This program is developed by **Chartered Institute of Professional Certifications** and the content of this program has been certified by **CPD Certification Service** as conforming to continuing professional principles.

ABOUT US

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CONTACT US TODAY

We Thank You for Your Ongoing Support
of Our Programs

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