2024-2025

RAI™

CANDIDATE GUIDE

GARP®

RAI™ | Risk and AI
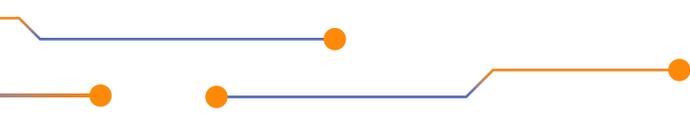
CONTENTS

INTRODUCTION

Across nearly every industry sector, advances in technology have greatly increased the scalability and access to artificial intelligence (AI) and machine learning (ML) applications. But as organizations evaluate the integration of AI into their day-to-day operations, it's critical for them to understand the potential risks, regulations, and ethical considerations associated with its use.

Developed by world-leading AI experts and senior risk practitioners, GARP's Risk and AI (RAI™) Certificate offers key insights into the evolution of AI/ML methodologies; knowledge of current tools and techniques for leveraging AI in support of business decision making; potential risks that arise through its use; and governance frameworks for organizations to mitigate exposure and ensure AI is deployed responsibly. In addition, exclusive case studies are offered as a supplement to the RAI curriculum to give candidates an incisive look at how companies are deploying AI techniques to solve real-world problems.

Individuals who earn the RAI Certificate will join a diverse, global community of professionals who recognize the accelerating impact of AI and the importance of developing knowledge to effectively manage the risks associated with it.

RAI Course Content

AI and Risk: Intro and Overview	Tools and Techniques	Risks and Risk Factors
• Brief history of AI • Introduction to classical AI • Introduction to neural nets • Overview of machine learning techniques and applications • Introduction to generative AI and large language models (LLMs) • Risks associated with AI/ML • Navigating this course	• Introduction to tools and techniques • Data preparation • Unsupervised learning • Supervised learning • Semi-supervised learning • Reinforcement learning • Model estimation • Model performance evaluation • Natural language processing • Generative AI and LLMs	• Algorithmic bias and fairness • Explainability, interpretability, and transparency • Autonomy and manipulation • Safety and well-being • Reputational risk • Existential risk • Global trends, challenges, and risks
Responsible and Ethical AI	**Data and AI Model Governance**	**Case Studies and Practitioner Perspectives**
• Introduction to practical ethics • Ethical frameworks • What AI ethics can learn from medical ethics • Principles of AI ethics • Tackling the challenges of AI with ethics • Privacy and cybersecurity • Regulatory landscape	• Data governance • Model governance • Model development and testing • Model validation • Model risk management policies and documentation • Model review and change management	• Predicting returns • Classifying loan defaults • Credit scoring and lending decisions • Macroeconomic forecasting • Market risk management • Modeling mortgage payments • Selection of videos offering exclusive practitioner perspectives on AI applications

Becoming an RAI Certificate Holder

The RAI Certificate requires no prior work experience in AI, machine learning, or risk management. In addition, no coding or programming is required to work through the curriculum. However, candidates must pass a multiple-choice Exam to become an RAI Certificate Holder. To enroll in the RAI Program, first register for the RAI Exam online via GARP's website during the prescribed exam registration window.

Upon passing the RAI Exam, GARP strongly recommends that RAI Certificate Holders keep their skills and knowledge up to date by participating in GARP's Continuing Professional Development (CPD) Program. The CPD Program offers RAI Holders a framework to stay ahead of the curve through ongoing education. GARP encourages participants to earn 10 credit hours per year to maintain the integrity of their Certificate. Although participation in CPD is voluntary, such continuing education throughout one's career is considered the recommended best practice.

Who Should Consider the RAI Certificate?

Knowledge gained from the RAI Certificate is applicable and valuable to a wide range of candidates — from senior-level business managers and professionals working directly in risk, data analytics, or building AI models, to students majoring in business, data analytics, economics, engineering, or technology and programming related degrees.

Executives and Decision Makers
Business leaders are increasingly making data-driven decisions that rely on AI/ML applications. The RAI Certificate helps ensure organizational decision makers understand AI tools and techniques, as well as the benefits they offer, the risks they create, and the frameworks available for managing potential threats to the reputation or the continuity of their business.

Risk Management Professionals
Within an organization deploying AI in support of business operations or processes, there may be a wide range of professionals either working directly with AI models or bearing some responsibility for managing associated risks. It's critical for these professionals to understand the managerial perspective on AI and be able to ask the right questions to ensure AI models are implemented responsibly. The RAI Certificate offers such a perspective, exposing candidates not only to the tools and techniques of AI, but also the strategic considerations associated with AI.

Innovators and Entrepreneurs
Start-up founders and business owners exploring AI and ML as part of their business model or product offerings can benefit from the RAI Program. The curriculum provides crucial insights into managing risks and deploying AI technologies effectively and ethically.

Students
Students with an interest in a broad-based presentation of AI tools and techniques and their organizational impact may elect to sit for the RAI Exam during or after completing their studies. The RAI curriculum can complement their prior coursework and help them develop a foundation of specialized knowledge that goes beyond the academic curriculum. Because the RAI Exam is practitioner-driven, students who earn the RAI Certificate demonstrate to future employers their ability to master complex real-world challenges.

HOW THE RAI CERTIFICATE CAN ADVANCE YOUR CAREER

Inspired by the growing pressure felt by firms across industries to incorporate AI into operations and business practices, our cutting-edge Certificate Program underscores the urgency for organizations to address relevant issues driven by the deployment of AI. Passing the RAI Exam and earning the Certificate demonstrates one has the knowledge needed to assess and manage AI-related challenges across many industries. This puts RAI Certificate Holders, and the organizations that employ them, at a competitive advantage.

The RAI Program also provides real-world insights into how AI is applied in practice through exclusive case studies, covering topics such as credit scoring, macroeconomic forecasting, market risk management, prediction of market returns, classification of loan defaults, and modeling mortgage payments.

Benefits of the RAI Certificate

- **Accessible and Comprehensive Knowledge**
  The RAI Program offers accessible, comprehensive knowledge that will have immediate practical impact, without the need for prior AI/ML or risk management experience, or a background in data analytics and programming.
- **Enhance Your Value to Employers**
  RAI Certificate Holders will understand the relationship between AI and risk, making them well-equipped to partner with others in their organization to implement a safe AI-driven business culture.
- **Ethical Leadership in AI Use**
  With a strong emphasis on ethical considerations and governance frameworks, the RAI Program cultivates leaders who are equipped to guide their organizations in responsible AI use. This ethical leadership is increasingly important as businesses seek to build trust with customers, regulators, and the public in their AI initiatives.
- **Help Lead Your Organization in Ethical AI**
  Position yourself to be a leader in establishing an ethical culture around AI that builds trust and credibility in your organization's use of AI with customers, regulators, and the public.
- **Global Networking Opportunities**
  RAI Certificate Holders join an elite, global community of AI, ML, and risk management professionals and leaders. This network serves as a hub for sharing insights, discussing trends, and fostering collaborations. Engaging with this community offers unique opportunities for partnerships and career advancement.
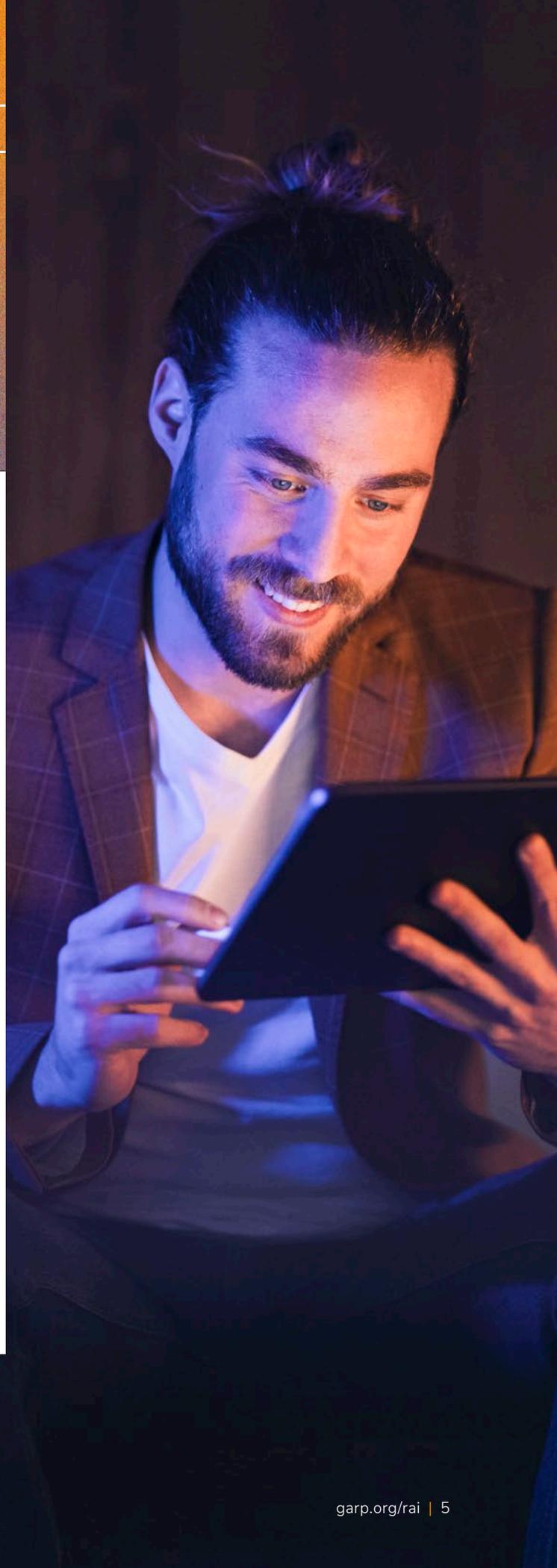
EXAM DEVELOPMENT, STRUCTURE, AND CONTENT

Exam Development

The RAI Certificate Program is developed under the guidance of GARP's AI Advisory Committee, which is comprised of prominent global leaders in AI, from both industry and academia. On an annual basis, the Advisory Committee establishes and revises the topic areas tested on the Exam. GARP actively engages in structured surveys to identify the essential knowledge, skills, and abilities needed by professionals working with AI, utilizing AI model outputs, or overseeing teams that leverage AI. This approach ensures that successful RAI Certificate holders are equipped with the competencies necessary to address AI-related issues effectively within their organizations.

Exam Structure

The RAI Exam is a comprehensive assessment that covers the history of AI, AI/ML tools and techniques, AI risks and risk factors, principles of responsible and ethical AI, and data and AI model governance. The Exam consists of 80 equally weighted, multiple-choice questions. Most Exam questions will be standalone, however, groups of 3-4 questions may draw on a common lead-in scenario. Candidates are allotted four (4) hours to complete the Exam. The Exam is currently offered in American English only — and will be administered remotely using Pearson Vue's online proctoring system, or on-site at a Pearson VUE computer-based testing (CBT) center.

Exam Content

MODULE	OVERVIEW
MODULE 1: AI and Risk: Intro and Overview EXAM WEIGHT: 8-12%	All technologies expose the companies that use them to risks of various sorts. But artificial intelligence (AI) introduces a novel set of risks that were quite unfamiliar until recently. This module offers a historical perspective on AI, an overview of both machine learning (ML) methodologies and generative AI, and an introduction to the risks associated with AI/ML.
MODULE 2: Tools and Techniques EXAM WEIGHT: 25-35%	This module offers an in-depth look at AI/ML tools and techniques and their uses, with coverage of the following: • Introduction to tools and techniques • Unsupervised learning • Supervised learning: Econometric techniques • Supervised learning: Machine learning techniques • Semi-supervised learning • Reinforcement learning • Supervised learning: Model estimation • Supervised learning: Model performance evaluation • Natural language processing • Generative AI
MODULE 3: Risks and Risk Factors EXAM WEIGHT: 15-25%	This module provides a comprehensive overview of the most important risks associated with AI development and deployment. It discusses the numerous challenges associated with the creation of a "fair" algorithm, highlighting the different sources of bias that might affect algorithmic fairness. It also addresses the twin problems of explainability and interpretability, and other noteworthy risks, including risk to human autonomy, risk of AI-driven manipulation, reputational risk, existential risk, and global risks and challenges.
MODULE 4: Responsible and Ethical AI EXAM WEIGHT: 15-25%	This module builds on the risks examined in Module 3 and explores how ethical principles and governance can guide the development and deployment of AI technologies in a way that promotes trust, safety, and fairness. It also looks at various ethical frameworks that can be applied to AI, the governance challenges associated with AI, and the current AI governance landscape.
MODULE 5: Data and AI Model Governance EXAM WEIGHT: 15-25%	This module discusses data and model governance and provides a starting point to establish a firm-specific model validation framework for AI/ML. While the principles presented apply to a wide range of industries, the primary focus is on the financial sector, and specifically quantitative risk models (QRMs), due to the established formal regulatory framework around QRMs. In addition to discussing governance across the entire model life cycle — from model development through performance monitoring and ultimately decommissioning — particular attention is also paid to the opacity of AI/ML models and the need for proper governance of the data used to train these models.
MODULE 6: Case Studies and Practitioner Perspectives (Optional) EXAM WEIGHT: 0%	As a supplement to the RAI curriculum, this module includes several optional case studies designed to illustrate how AI/ML can be leveraged in a range of contexts, including predicting investment returns, classifying loan defaults, credit scoring and lending decisions, macroeconomic forecasting, market risk management, and modeling mortgage payments. It also includes a selection of videos offering exclusive practitioner perspectives on AI applications.

DATES AND FEES

The RAI Exam will be offered once in 2024 and twice in 2025. The cost to register for the Exam varies based on the registration period, and you must register online. All fees are subject to change.

Key Dates: Exam Registration and Scheduling

2024 (Exam Administration Window: November 30 - December 8, 2024)	
Early Registration Period	August 1 - September 30, 2024
Standard Registration Period	October 1 - October 31, 2024
Last Day to Defer	November 1, 2024
2025 — Session 1 (Exam Administration Window: April 5 - April 13, 2025)	
Early Registration Period	December 1, 2024 - January 31, 2025
Standard Registration Period	February 1 - March 31, 2025
Last Day to Defer	April 1, 2025
2025 — Session 2 (Exam Administration Window: October 4 - October 12, 2025)	
Early Registration Period	May 1 - July 31, 2025
Standard Registration Period	August 1 - September 30, 2025
Last Day to Defer	October 1, 2025

Applications for special accommodations must be submitted 30 days prior to the appointment date. Candidates must schedule their Exam at least 48 hours prior to their desired exam start time.

Fees: 2024 and 2025

Fee Category	Early	Standard
Registration: Non-Member	USD 650	USD 750
Registration: Individual (Paid) Member	USD 550	USD 650
Registration: Certified FRM® or ERP®	USD 525	USD 625
Retake*	USD 350	USD 350
Deferral	USD 150	USD 150

*Candidates who don't pass their Exam, register and don't schedule their Exam, or schedule and don't take their Exam can, on a one-time basis, register to take their Exam on any available date within the next exam administration window. The candidate will have access to the RAI curriculum within GARP Learning during the registration period associated with the new exam date.

Study Resources

The RAI registration fee includes access to GARP's exclusive digital platform GARP Learning, which contains all the material needed to successfully complete the RAI Program.

Certificate of Completion

Candidates will receive a printable electronic certificate of completion and a complimentary digital badge upon passing the Exam.

Continuing Professional Development (CPD)

RAI Certificate Holders will have the option to continue to advance their education through the GARP CPD Program. Although CPD is not mandatory, Certificate Holders are strongly encouraged to earn 10 CPD credits per year to stay current.

Exam Locations

Exams are offered remotely using Pearson Vue's online proctoring system, or on-site at Pearson VUE computer-based testing (CBT) centers around the world. A complete list of CBT locations where the Exam is offered is available on our website; exam locations are subject to change.

Preparation

GARP Learning provides candidates with multiple modes of access to the RAI curriculum, as well as tools for charting your progress and managing your time. Due to the amount of material covered in the Exam, a weekly study schedule is recommended. Preparing for the Exam at the last minute is strongly discouraged. Exam preparation is estimated at 100-130 hours. This will vary based on prior professional experience, academic background, and familiarity with the concepts covered in the curriculum.

STUDY MATERIALS

To offer optimized learning tools for RAI Exam candidates, GARP created study materials to increase the likelihood of a successful Exam outcome. Access to the following is complimentary for all candidates registered to take the RAI Exam:

- The **RAI Study Guide and Learning Objectives** includes a complete list of chapter topics and key learning objectives. The RAI Advisory Committee identified these curriculum topics as essential for professionals working with or responsible for AI deployments. The Study Guide indicates how curriculum is weighted across these topics. Learning Objectives appear as bullet points within each module description; it is advisable to refer to these throughout your exam preparation.

- The **RAI Practice Exam** is a multiple-choice exam accessible via GARP Learning that includes sample questions similar to the ones on the actual RAI Exam. These questions broadly reflect material presented in the curriculum and represent a multiple-choice question style the RAI Advisory Committee considers appropriate. Explanations are included for correct and incorrect answer choices.

- Take advantage of our digital platform **GARP Learning**, a streamlined outlet for multimedia content, real-world case studies, and an RAI Practice Exam accessible via your candidate portal. With the flexibility to learn at your own pace from any location, candidates can also set up a study plan that optimizes their preparation schedule and accommodates work and life commitments. The interactive, multimedia-rich online environment should enhance your learning experience.

- Potential errors or discrepancies in the curriculum can be reported to GARP directly through GARP Learning or the candidate portal and flagged as **RAI Curriculum Errata.** GARP reviews all errata submissions and posts updated errata, including appropriate corrections. Visit our website or GARP Learning regularly for the latest RAI Curriculum Errata summary.

FREQUENTLY ASKED QUESTIONS

Q. What is the focus of the RAI Program?

A. The RAI Program provides candidates insight into the evolution of AI/ML methodologies, and knowledge of current tools and techniques for leveraging AI in support of business decision-making, the potential risks that arise through its use, and governance frameworks to mitigate exposure and ensure AI is deployed responsibly within an organization. Exclusive case studies are included in the RAI curriculum to enhance the learning experience and show how AI techniques are being applied by companies to solve real-world problems.

Q. How much work experience do I need to register for this program?

A. No work experience is required.

Q. Is coding knowledge required for the RAI Program?

A. No. Coding or programming is not required to work through the curriculum and pass the Exam.

Q. What level of mathematical background is required for the RAI program?

A. While the fields of AI and ML can be quantitative, the RAI program is designed to be accessible for a wide range of candidates with diverse backgrounds and training. Relevant concepts and techniques are presented in an easily understandable way. The level of mathematical difficulty is on par with an advanced undergraduate or introductory graduate level finance, statistics, or economics course at most universities.

Q. How much time do I need to prepare to sit for the Exam?

A. Preparation time will vary by candidate. Our expectation is that the average preparation time will be in the range of 100-130 hours.

Q. What will registration cost and what is included?

A. Early registration for the RAI Certificate Program will cost USD 650, USD 550 for Individual Members in good standing, and USD 525 for holders of GARP's FRM or ERP credential. Standard registration will cost USD 750, USD 650 for Individual Members in good standing, and USD 625 for holders of GARP's FRM or ERP credential. Registration fees include access to the full curriculum and a full-length practice exam via GARP Learning, the fee to sit for the Exam, and the certificate/badge for successful candidates.

Q. What is the format of the RAI Exam?

A. The Exam consists of 80 equally weighted, multiple-choice questions. The majority of Exam questions stand alone; however, groups of 3-4 questions may draw on a common lead-in scenario. Candidates are allotted four (4) hours to complete the Exam. Exams are offered remotely using Pearson Vue's online proctoring system, or on-site at Pearson VUE computer-based testing (CBT) centers around the world.

Q. In what language can I take the RAI Exam?

A. Currently, the RAI Exam is offered in American English only.

GARP | Global Association of Risk Professionals

garp.org

ABOUT GARP | The Global Association of Risk Professionals is a non-partisan, not-for-profit membership organization focused on elevating the practice of risk management. GARP offers the leading global certification for risk managers in the Financial Risk Manager (FRM®), as well as the Sustainability and Climate Risk (SCR®) Certificate, Risk and AI (RAI™) Certificate, and ongoing educational opportunities through Continuing Professional Development. Through the GARP Benchmarking Initiative (GBI)® and GARP Risk Institute, GARP sponsors research in risk management and promotes collaboration among practitioners, academics, and regulators.

Founded in 1996 and governed by a Board of Trustees, GARP is headquartered in Jersey City, N.J., with offices in London and Hong Kong.

For more information, visit garp.org or follow GARP on LinkedIn, Facebook, and X.

HEADQUARTERS
111 Town Square Place
14th Floor
Jersey City, New Jersey
07310 USA
+1 (201) 719.7210

LONDON
17 Devonshire Square
4th Floor
London, EC2M 4SQ UK
+44 (0) 20 7397.9630

HONG KONG
The Center
99 Queen's Road Central
Office No. 5510
55th Floor
Central, Hong Kong SAR,
China
+852 3168.1532