

CERTNEXUS[®]

Data Ethics Business Professional
(DEB-110) Exam Blueprint



DEBIZ[™]

1/14/22


Introduction to CertNexus

CertNexus is a vendor-neutral certification body, providing emerging technology certifications and micro-credentials for business, data, developer, IT, and security professionals. CertNexus' mission is to assist closing the emerging tech global skills gap while providing individuals with a path towards rewarding careers in Cybersecurity, Data Science, Data Ethics, Internet of Things, and Artificial Intelligence (AI)/ Machine Learning.

We rely on our Subject Matters Experts (SMEs) to provide their industry expertise and help us develop these credentials by participating in a Job Task Analysis, Exam Item Development, and determining the Cut Score. We also depend upon practitioners in the field to participate in a survey of the Job Task Analysis and beta testing to ensure that our certifications validate knowledge and skills relevant to the industry.

Acknowledgements

CertNexus was honored to have the following subject matter experts contribute to the development of this exam blueprint.

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CertNexus Data Ethics Business Professional (DEBIZ™) Exam DEB-110

Exam Information

Consumers and investors expect organizations to follow the tenants of ethical AI as part of their use of data-driven technologies. With the advent of global regulatory policies and potential loss in consumer trust and revenue, organizations need a culture, led from within, which demonstrates an understanding of ethical principles and drives the application of those principles in technology. DEBIZ empowers professionals to identify sources of ethical risk and move beyond transparency to understand all ethical principles, while balancing business considerations of ethically driven technology.

Candidate Eligibility

The *Data Ethics Business Professional (DEBIZ™)* credential requires no fee, supporting documentation, or other eligibility verification measures for you to complete the credential process. Simply purchase an access key for the *DEBIZ™ (Exam DEB-110): Data Ethics for Business Professionals* course from the CertNexus Store [here](#). This course includes access to the credential process directly through the CHOICE platform.

Exam Prerequisites

While there are no formal prerequisites to register for and schedule an exam, we strongly recommend you first possess the following knowledge, skills, and abilities:

- Understanding of data privacy.
- Understanding of the elements of accountability and professional responsibility.
- Understanding of transparency and explainability.
- Understanding of types of fairness.
- Understanding of how tech can be used for good.
- Understanding of trade-off analysis and incorrect prioritization of one criterion over more important criteria.
- Understanding of types of laws applicable to data.
- Understanding of key anti-discrimination legislation.
- Understanding of responsible business practices.
- Understanding of applying ethical principles in business.
- Understanding of ethically driven business data models and business operations.
- Understanding of bias and bias mitigation techniques.
- Understanding of data discrimination and disparate impact.
- Understanding of data safety and security.
- Understanding of data surveillance.
- Understanding of artificial intelligence and data science.

You can obtain this level of skill and knowledge by taking the following courseware, which is available through training providers around the world, or by attending an equivalent third-party training program:

- *DEBIZ™ (Exam DEB-110): Data Ethics for Business Professionals*

Exam Specifications

Number of Items: 25

Passing Score: 80% or 20/25 Items

Duration: Estimated 20-45 minutes, candidates may retake as many times as desired

Exam Options: Online through the CHOICE platform or in person at select proctored events

Item Formats: Multiple Choice/Multiple Response

Exam Description

Target Candidate:

The *Data Ethics Business Professional (DEBIZ™)* exam is designed for individuals who are seeking to demonstrate an understanding of ethical uses of data in business settings. The exam is open to new and established professionals seeking to learn more about data ethics in the modern business world.

Exam Objective Statement:

A Data Ethics Business Professional is an individual who has demonstrated foundational knowledge of the ethical use of data in emerging technologies in a business context consistent with the DEBIZ Job Task Analysis. A credential holder is able to identify, explain, and document how organizations identify ethical principles and considerations, understand sources of risk, and explain how businesses can create sustainable, ethical decision-making processes.

To ensure exam candidates possess the aforementioned knowledge, skills, and abilities, the DEBIZ exam will test them on the following domains with the following weightings:

Domain	% of Examination
1.0 Ethical Principles	32%
2.0 Business Considerations	32%
3.0 Sources of Risk	36%
Total	100%

The information that follows is meant to help you prepare for your certification exam. This information does not represent an exhaustive list of all the concepts and skills that you may be tested on during your exam. The exam domains, identified previously and included in the objectives listing, represent the large content areas covered in the exam. The objectives within those domains represent the specific tasks associated with the job role(s) being tested. The information beyond the domains and objectives is meant to provide examples of the types of concepts, tools, skills, and abilities that relate to the corresponding domains and objectives. All of this information represents the industry-expert analysis of the job role(s) related to the certification and does not necessarily correlate one-to-one with the content covered in your training program or on your exam. We strongly recommend that you independently study to familiarize yourself with any concept identified here that was not explicitly covered in your training program or products.

Objectives

Domain 1.0 Ethical Principles

Objective 1.1 Identify the key features of data privacy.

- Privacy models
 - Comprehensive
 - Sectoral
 - Co-regulatory
 - Self-regulatory
- Privacy legislation and regulations
 - GDPR
 - HIPAA
- The ways that consent can be given
- Variability of proper consent based on location
- Issues/shortcomings of individual self-managed consent paradigm
- Digital footprints
- Privacy by Design (PbD) foundational principles

Objective 1.2 Understand the key elements of accountability.

- Data governance frameworks
- Documentation of best practices
- Accuracy & integrity
- Individual and collective responsibility for maintaining existing values
- Audit types
- Risk assessments
- Data Protection Impact Assessments (DPIAs)
- Contractual best practices
- Understand broader professional responsibility in the collection and use of data
 - ACM Code of Professional Ethics
- Ethical design of technology
- Whistleblower policy
- Consideration for long term effects

Objective 1.3 Understand the essential features and approaches to transparency and explainability.

- Data transparency
- Notice about interaction with AI and decisions of AI
- Choice to ignore AI-based outcomes/be excluded from automated decisions
- Secondary uses of data
- Explainability
- Auditability
- Right to information data interpretation and data labels
- Challenges of transparency and explainability

Objective 1.4 Demonstrate an understanding of human-centered values and fairness.

- Data models that prioritize human values
- Protected classes (variable by jurisdiction)
- Community involvement in decision-making
- Types of fairness

- Procedural
- Outcome
- Correlation vs. Causation
- Unmeasurable impacts that fall outside of metrics
- Social norms
- Group versus individual
- Statistical accuracy
- False positives and negatives
- Testing prior to deployment

Objective 1.5 Identify important features of inclusive growth, sustainable development, and well-being in pursuit of beneficial outcomes for people and the planet.

- Tech for good
- Human agency
- Need for competence
- Human rights as grounds for data stewardship
- Indigenous Data Governance
- Intercultural Digital Ethics
- Global inclusivity (of non-western based values and principles)
- Human-Computer Interaction
- Critical Data Studies
- Impact on natural environments
- Impact on labor

Objective 1.6 Understand the methodology for identifying and assessing trade-offs.

- Trade-off analysis
- Consideration of all potential models
- How decisions can lead to systems that incorrectly prioritize one criterion over another more important criteria
- Senior management approval of the model selected can lead to models being developed that are unsuitable or pose a risk to personal data
- Conducting continuous review of a data system leads to new trade-offs not being considered or approved

Domain 2.0 Business Considerations

Objective 2.1 Identify the types of laws applicable to data.

- Product liability laws
- Directors' duties
- Corporate structures
 - Partnerships
 - LLCs
 - Charities
- Anti-discrimination laws
- Legal basis
 - GDPR
- Notice
 - GDPR
 - BIPA

- Children's Code
- Alignment to AI principles of equity
- Key anti-discrimination legislation
 - Fair Credit Reporting Act
 - Title VII of Civil Rights Act
 - Human Rights Declaration

Objective 2.2 Understand the key implications of social and behavioral effects.

- Disinformation and misinformation
- Nudging/Social Proofing
- Decision-making
- Social rating systems
- User profiling and matching algorithms

Objective 2.3 Recognize the responsible business practices that reinforce trustworthiness in organizations.

- Stakeholder management and communication strategies
- Types of stakeholders
 - Internal
 - External
- Data hygiene best practices
- Credibility and reliability

Objective 2.4 Understand how the use of data can have a positive or negative effect on business reputation.

- Talent attraction and retention
- Consumer loyalty and Net Promoter Score
- Improved investor and business partner relationships through ethics
- Brand enhancement through commitment to continuous data curation
- Reputation impact of data ethics

Objective 2.5 Recognize how organizational values are embedded along the data value chain.

- Identify key values in a data-centric culture
- Understand how organizational values align to data ethics
- Decision-making in line with organizational values
- Applying ethical principles in business
- Ethical supply chain management

Objective 2.6 Explain the business case for ethically driven business data models.

- Benefits and harms of granular tracking and microtargeting
- Commercial justifications and advantages of acting ethically
- Value alignment
- The pace at which legislation lags technology innovation

Objective 2.7 Demonstrate an understanding of the connection between ethics to business operations.

- Complex AI/data supply chains
- The use of data and AI internally
- Accountability
 - Roles

- Responsibilities
- Automation and productivity
- Ethics training

Domain 3.0 Sources of Risk

Objective 3.1 Demonstrate an understanding of bias and how it can be embedded in emerging tech.

- Statistical definition of bias
- Bias reflected within datasets
 - Historical
 - Structural
 - Sampling
 - Availability bias
- Technocentrism and techno-solutionism
- Bias mitigation techniques

Objective 3.2 Identify ways in which data and AI can lead to discrimination, both directly and indirectly.

- Disparate impact
- Unintentional data discrimination
- Account for biases in data models
- Fairness above analytics

Objective 3.3 Identify the key aspects of safety and security in using data.

- Data protection principles
- Data systems
- Cyber Security
- Impact on outputs
- Risk of harm
- Unauthorized disclosure/access
- Risk mitigation
- Theft of proprietary information and data
- Disinformation campaigns
- Adversarial machine learning

Objective 3.4 Understand how AI and data science can lead to abnormal, unintended, or unintelligible outputs.

- Concept drift
- Human in the loop
- Detecting abnormal behaviors

Objective 3.5 Understand the important concepts of data surveillance and its broadening scope.

- Online behavior tracking
- Internet-of-things and embedded computing
- Smart and mobile devices
- Biometric data
- Facial recognition software
- Smart home/smart city
- Hidden data exchange markets

- First-party, second-party, and third-party data
- Predictive analytics
- Employee surveillance

DEBIZ Acronyms

Acronym	Expanded Form
ACM	Association for Computing Machinery
AI	Artificial Intelligence
BIPA	Biometric Information Privacy Act
DPIAs	Data Protection Impact Assessments
GDPR	General Data Protection Regulation
HIPAA	Health Insurance Portability and Accountability Act
LLC	Limited Liability Company
PbD	Privacy by Design



CertNexus offers personnel certifications and micro credentials in a variety of emerging technology skills including Cybersecurity, Cyber Secure Coding, the Internet of Things (IoT), IoT Security, Data Science, Artificial Intelligence, and Data Ethics. For a complete list of our credentials visit <https://certnexus.com/certification/>.

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