

# **Rutgers Stackable Business Innovation (rSBI) Program**

## **Short Courses and Modules Catalog**

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# **Rutgers Stackable Business Innovation (rSBI) Program**

## **Short Courses and Modules Catalog**

This catalog lists the current set of rSBI 1-credit courses and their constituent modules across all Rutgers Business School departments. Each course consists of 5 modules of which at most one is required, at least 3 are recommended and at most one is an elective that can be selected from the entire module list (across all departments), provided it has not already been selected as a required or recommended module.

Note that this document contains a comprehensive set of all rSBI approved courses, but not all courses listed herein will be available in any given semester.

# 1. rSBI Short Courses Offered by Accounting and Information Systems

## 1.1 Courses

### 1.1.1 Course Number: 22:010:540

**Course Name:** Continuous Business Monitoring

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:**

- **Required Module:** Basics of Continuous Auditing and Continuous Monitoring (AIS-M1)
- **Recommended Modules** (select at least three modules):
  - Basics of Artificial Intelligence in Accounting and Audit (AIS-M2)
  - Introduction to Process Mining (AIS-M3)
  - Use of Classifiers in Audit (AIS-M4)
  - Analyses of Exceptions and Anomalies (AIS-M5)
  - Duplicate Detection Techniques (AIS-M6)
  - Introduction to Audit Automation (AIS-M7)
- **Elective Module** (select at most one different from the ones selected for this course):

**Course Description:** This course describes a paradigm shift from the traditional auditing and monitoring approach. Rather than resorting to analyzing a sample of the population, this course presents methodologies and techniques that can be applied to the entire population of records in an audit-by-exception manner. The students learn about various related topics, such as process mining, artificial intelligence, exception identification and prioritization, automation, among others.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

### 1.1.2 Course Number: 22:010:541

**Course Name:** Emerging Technologies in Business

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:**

- **Required Module:** Emerging Audit Evidence (AIS-M8)

- **Recommended Modules** (select at least three modules):
  - Basics of Artificial Intelligence in Accounting and Audit (AIS-M2)
  - Introduction to Process Mining (AIS-M3)
  - Basics of Audit Data (AIS-M9)
  - Databases and SQL for Audit (AIS-M10)
  - Data Preprocessing and Manipulations for Audit (AIS-M11)
  - Introduction to Data Visualization and Visual Analytics (AIS-M12)
  - Interactive and Dynamic Graphs and Dashboards (AIS-M13)
  - Sentiment Analysis and Regular Expression in Text Mining (AIS-M14)
  - Introduction to Blockchain and Smart Contracts (AIS-M15)
  - Introduction to Crypto Currencies (AIS-M16)
  - Basics of Cybersecurity (AIS-M17)
- **Elective Module** (select at most one different from the ones selected for this course):

**Course Description:** This course covers a wide range of emerging technologies in the accounting and auditing areas. Students are introduced to data visualization and interactive dashboards, artificial intelligence, process mining, blockchain and smart contracts, crypto currencies, cybersecurity, and text mining. Moreover, students learn about practical applications and use cases of such technologies in a business environment.

**Sample Relevant Careers:** Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst, Product Manager

### 1.1.3 Course Number: 22:010:542

**Course Name:** Business Process Automation

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:**

- **Required Module:** Introduction to Audit Automation (AIS-M7)
- **Recommended Modules** (select at least three modules):
  - Basics of Continuous Auditing and Continuous Monitoring (AIS-M1)
  - RPA Fundamentals: UiPath I (AIS-M18)
  - RPA Fundamentals: UiPath II (AIS-M19)
  - RPA Fundamentals: UiPath III (AIS-M20)
  - Advanced Topics in Audit Automation: Automation and Data Analytics (AIS-M21)
  - Automation Case Study: Billing (AIS-M22)
  - Introduction to Process Mining (AIS-M3)
- **Elective Module** (select at most one different from the ones selected for this course):

**Course Description:** This course discusses the increasingly popular Robotic Process Automation (RPA) technology. Students learn about progressively advanced and complex scenarios of

automation. In addition, they learn about the relationship between automation and the concept of continuous auditing and continuous monitoring, as well as hands-on use cases in accounting.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.1.4 Course Number:** 22:010:543

**Course Name:** Cloud Computing Blockchain and Crypto

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:**

- **Required Module:** Introduction to Blockchain and Smart Contracts (AIS-M15)
- **Recommended Modules** (select at least three modules):
  - Introduction to Process Mining (AIS-M3)
  - Duplicate Detection Techniques (AIS-M6)
  - Emerging Audit Evidence (AIS-M8)
  - Introduction to Crypto Currencies (AIS-M16)
  - Basics of Cybersecurity (AIS-M17)
  - Fair Value Measure of Crypto Currency (AIS-M23)
  - Information Risk Management (AIS-M24)
  - Crypto Currency Markets and Ecosystem (AIS-M25)
- **Elective Module** (select at most one different from the ones selected for this course):

**Course Description:** This course introduces students to blockchain technology and smart contracts and to how they are applied in an accounting and auditing context. Students learn about various issues related to crypto currencies and their valuation and markets, such as their unique properties and the technologies used to build them. Furthermore, students learn about information risk management and cybersecurity as well as their impact on business and good practice standards of cybersecurity.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant Tax Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.1.5 Course Number:** 22:010:544

**Course Name:** AI in Accounting and Audit

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:**

- **Required Module:** Basics of Artificial Intelligence in Accounting and Audit (AIS-M2)
- **Recommended Modules** (select at least three modules):
  - Basics of Continuous Auditing and Continuous Monitoring (AIS-M1)
  - Introduction to Process Mining (AIS-M3)
  - Use of Classifiers in Audit (AIS-M4)
  - Analyses of Exceptions and Anomalies (AIS-M5)
  - Duplicate Detection Techniques (AIS-M6)
  - Introduction to Audit Automation (AIS-M7)
  - Basics of Clustering for Audit (AIS-M26)
  - Basics of Regression Analyses for Audit (AIS-M27)
  - Advanced Artificial Intelligence in Accounting and Audit (AIS-M28)
- **Elective Module** (select at most one different from the ones selected for this course):

**Course Description:** In this course students learn about Artificial Intelligence (AI) and some of its potential applications in accounting and auditing. By studying the technology from a business perspective, students get a more holistic view of its uses. In addition to the basics of AI, students study techniques such as classifiers, cluster analysis, exception and anomaly detection, automation, and learn more advanced applications of AI in accounting and auditing.

**Sample Relevant Careers:** Controller, Certified Public Accountants (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.1.6 Course Number:** 22:010:545

**Course Name** Design It Yourself in Accounting and Audit

**Course STEM Designation:** Yes

**Delivery Mode:** Online asynchronous

**Prerequisites:** None

**Credits:** 1

**Offered By:** Accounting and Information Systems Department

**Programs Potentially Accepting Credit Transfer:** MBA in Professional Accounting, MAACY in Professional Accounting, MBA, Executive Education

**Available By:** Now

**Course Module List:** Select any 5 modules from the entire program's module list, provided they were not selected in any course already taken

**Course Description:** This course allows students to design this course by allowing them to select modules of interest. More specifically, students can choose any five modules from the set of all eligible modules across all rSCBI courses and across all RBS departments.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

## 1.2 Course Modules

### 1.2.1 Module Code: AIS-M1

**Module Name:** Basics of Continuous Auditing and Continuous Monitoring

**Module Description:** This module discusses the application of data analytics to the entire population of records, moving away from traditional auditing to an audit-by-exception (agile) approach. Students learn how continuous auditing can assist in identifying business risks through the timely identification of audit evidence.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor

### 1.2.2 Module Code: AIS-M2

**Module Name:** Basics of Artificial Intelligence in Accounting and Audit

**Module Description:** Artificial Intelligence (AI) and its underlying component, Machine Learning (ML), are integrated into every facet of our lives – from healthcare to our homes. Many companies have relied on AI to drive the success of their businesses. This module introduces students to the benefits of AI and shows its current business applications and potential uses in the accounting and audit domains. Each of the major AI types is covered in detail with descriptions and examples.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

### 1.2.3 Module Code: AIS-M3

**Module Name:** Introduction to Process Mining

**Module Description:** Process mining is a technique that extracts information from event logs to discover, monitor and improve business processes. This module is designed to give an introductory overview of process mining and explain its application using software. The module illustrates how to define process mining and use it to interpret and process data, and further describes the techniques that help extract information from event logs to discover, monitor, and improve business processes. This module also demonstrates how to utilize process mining technique by providing a

real data example of the RADAR (Rutgers AICPA Data Analytics Research) project at CAR (Continuous Auditing and Reporting) Lab.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

#### 1.2.4 **Module Code:** AIS-M4

**Module Name:** Use of Classifiers in Audit

**Module Description:** This module introduces various classification models, including, decision trees and K-Nearest Neighbors (K-NN), and explains how to build them. It further covers ensemble methods of classifiers and their benefits when utilized in the model. The evaluation of the classifiers is performed through a variety of methods.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, , Financial Advisor.

#### 1.2.5 **Module Code:** AIS-M5

**Module Name:** Analyses of Exceptions and Anomalies

**Module Description:** Statistical methods for exception detection in traditional auditing do not fit well into continuous auditing. Generally, the number of identified exceptions is too large to investigate in its entirety. The module explains how the concept of Exceptional Exceptions works to mitigate information overload encountered in the conventional method. Following exception identification, this methodology provides a risk-based exception prioritization method to rank those exceptions in the order of suspicion. The material covers the internal logic of the methodology, analytics steps, and relevant algorithms. Use cases are presented to better understand the techniques.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant, Financial Advisor

#### 1.2.6 **Module Code:** AIS-M6

**Module Name:** Duplicate Detection Techniques

**Module Description:** Duplicate records in databases may lead to problems, but their causes vary. Duplicate detection plays a vital role in data analytics. This module covers the steps of two methods to detect duplicates. It focuses on the duplicate payments problem in accounting and illustrates the application of detection methods to duplicate payments. The accuracy and evaluation of the technique are also covered.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant, Financial Advisor

#### 1.2.7 **Module Code:** AIS-M7

**Module Name:** Introduction to Audit Automation

**Module Description:** Business Process Automation was designed to carry out repetitive tasks that allow humans to solve complex business problems. The use of Robotic Process Automation (RPA) in audit procedures can give rise to a more efficient and accurate auditing process. This hands-on



module demonstrates the effectiveness of RPA and its application in accounting, auditing, and data analytics.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

#### 1.2.8 **Module Code:** AIS-M8

**Module Name:** Emerging Audit Evidence

**Module Description:** This module takes a holistic view of accounting and finance and the evolution from traditional to digital models. These changes necessitate new and more relevant ways of approaching the profession and dealing with the challenges associated with technology-driven finance and accounting business models. This module provides a brief overview of different technology types, and then details their use and business implications.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant, Financial Advisor.

#### 1.2.9 **Module Code:** AIS-M9

**Module Name:** Basics of Audit Data

**Module Description:** This module explains the concepts of data types, data classifications and operations on data. It then defines the concepts of frequency, central tendency, and variability and dispersion measures, and provided examples. Additional concepts of statistical analyses, skewness and kurtosis are also covered with visual explanations.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant, Financial Advisor

#### 1.2.10 **Module Code:** AIS-M10

**Module Name:** Databases and SQL for Audit

**Module Description:** This module provides an introduction to Structured Query Language (SQL) queries and how they can be used to independently retrieve properly formatted data as audit evidence or for further analysis. For each clause of the SELECT statement, its purpose is explained, and relevant examples are provided.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant, Financial Advisor

#### 1.2.11 **Module Code:** AIS-M11

**Module Name:** Data Preprocessing and Manipulations for Audit

**Module Description:** This module covers basic Excel exercises that teach students to manipulate data for a variety of purposes. Students learn how to properly format the data for further analysis and how to use simple formulas in Excel. The module covers the simplest but most common features of spreadsheets used in the business world.

**Sample Relevant Careers:** Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, , Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Credit Analyst

#### 1.2.12 **Module Code:** AIS-M12

**Module Name:** Introduction to Data Visualization and Visual Analytics

**Module Description:** Visualization tools and techniques provide enhanced understanding of data and processes, and as such can provide powerful evidence for communicating an accounting and finance story. Visual analytics provide insights and helps identify patterns in the data. This hands-on module introduces the statistical package R, its common variable types and charts, and demonstrates the R codes for chart visualization, and visualization functions of Tableau. It further explains the differences between exploratory and explanatory visualizations.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, , Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst.

#### 1.2.13 **Module Code:** AIS-M13

**Module Name:** Interactive and Dynamic Graphs and Dashboards

**Module Description:** This module covers additional data visualization concepts via a hands-on visualization case and an accompanying recorded videos to introduce students to conducting ratio analysis using visualization software. Students learn to create different types of graphs and dynamic dashboards that include multiple interactive graphs.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

#### 1.2.14 **Module Code:** AIS-M14

**Module Name:** Sentiment Analysis and Regular Expression in Text Mining

**Module Description:** This module discusses how auditors can use text mining to retrieve unstructured data on accounting-related materials, and how the information can provide valuable insights. In addition, it helps them understand ways to compare various contextual factors, including lexical bundle analysis, and learn to extract and analyze potential data such as financial statements, news articles, internal emails, and customer voice. It further highlights the importance of internet data (Twitter, LinkedIn, Facebook) in the understanding market and product trends for accounting and finance (Sentiment analysis).

**Sample Relevant Careers:** Certified Public Accountant (CPA), Data Analyst, Consultant, Financial Advisor, Credit Analyst

**1.2.15 Module Code:** AIS-M15

**Module Name:** Introduction to Blockchain and Smart Contracts

**Module Description:** This module presents the background of blockchain technology and its internal design, including how hash functions and chain structure work in blockchain. The module also illustrates how a smart contract is designed with blockchain technology and its application in business, and particularly in accounting.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

**1.2.16 Module Code:** AIS-M16

**Module Name:** Introduction to Crypto Currencies

**Module Description:** This module explains the purpose and use of crypto currency, and its impact on the global economy. It addresses the key technologies used to build a crypto currency system, and the properties that differentiate crypto currencies from traditional currencies. It further reviews the crypto currency market situation and associated evolving accounting principles, including legislation and its implications for accounting and finance.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

**1.2.17 Module Code:** AIS-M17

**Module Name:** Basics of Cybersecurity

**Module Description:** The widespread use of technology has created many efficiencies for accounting and finance while simultaneously creating challenges related to ethics and privacy. This module discusses the importance of cybersecurity and the challenges associated with a complex cyber environment. It further introduces good practice standards, organizations, and frameworks of cybersecurity management.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant

**1.2.18 Module Code:** AIS-M18

**Module Name:** RPA Fundamentals: UiPath I

**Module Description:** This module uses UiPath, a leading automation software, to demonstrate the Robotic Process Automation technology. In this module, students learn basic automation concepts such as sequence, control flow, loops, etc. Decision points are explained with examples, and an automation project is discussed using the flowcharts.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.19 Module Code:** AIS-M19

**Module Name:** RPA Fundamentals: UiPath II

**Module Description:** This module (the second in the UiPath series) continues the explanation of more basic automation tools of UiPath, including user interface, inputs, containers, recording and selectors. The data manipulation of tables for automation purposes is discussed and covered with examples, including table and collection manipulations. The user interface of the UiPath is further explored and useful features of the software are described.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.20 Module Code:** AIS-M20

**Module Name:** RPA Fundamentals: UiPath III

**Module Description:** This module (the third and last in the UiPath series) covers more advanced automation features of the UiPath software, including screen scraping, data scraping and etc. It further illustrates automation of PDF files, Excel workbook and email in detailed steps with examples. The PDF extraction practice is presented as a useful skill for students to master.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.21 Module Code:** AIS-M21

**Module Name:** Advanced Topics in Audit Automation: Automation and Data Analytics

**Module Description:** Big data has become very common in daily life. This module presents the definition and examples of big data and then introduces various data analytics types and tools that implement them. Additionally, the module introduces basic Python programming and descriptive analysis with Python. For Robotic Process Automation, the module introduces the UiPath automation system and combines it with Python.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.22 Module Code:** AIS-M22

**Module Name:** Automation Case Study: Billing

**Module Description:** This module demonstrates the application of Robotic Process Automation (RPA) in accounting via a hands-on billing case using UiPath. It walks students through the requisite steps to map out the major tasks of the process, including flowchart creation, culminating in building a bot for invoice generation for all customers (Part 1) and unbilled customers (Part 2). The configuration of the bot implements the logic of RPA as presented in the flowchart.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.23 Module Code:** AIS-M23

**Module Name:** Fair Value Measure of Crypto Currency

**Module Description:** This module reviews US regulations and accounting standards which are essential for fair value measurement. Furthermore, it analyzes the possible classification of crypto currency measurements and proposes the current fair value measurement consensus. As an illustration, a quantitative model is applied to evaluate the fair value of crypto currency in a test field whose results are also examined in the module.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.24 Module Code:** AIS-M24

**Module Name:** Information Risk Management

**Module Description:** This module addresses Information Risk Management, including the steps of vulnerability identification and control risk identification in cybersecurity. Moreover, it describes the types of controls using factor analysis for information risk. Students also learn how to use the two-factor quantitative model to assess information risk.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.25 Module Code:** AIS-M25

**Module Name:** Crypto Currency Markets and Ecosystem

**Module Description:** The crypto currency market has developed quickly in recent years. This module introduces the common crypto currency, exchanges, and other relevant financial concepts in this emerging market. “Coinbase” is a typical example of how investor wallets interact with businesses and banks. The module further describes the centralized and decentralized transaction structures in the market and explains how they form an ecosystem.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

**1.2.26 Module Code:** AIS-M26

**Module Name:** Basics of Clustering for Audit

**Module Description:** This module covers basic clustering algorithms (k-means, hierarchical, DBSCAN) and how they run. This technology is widely used in identifying outliers as well as profiling of records (customers, suppliers, users, etc.) Cluster types are explained and their use in the field is discussed. Additionally, limitations of clustering algorithms are explained and methods to assess cluster validity are demonstrated.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant, Financial Advisor

**1.2.27 Module Code:** AIS-M27

**Module Name:** Basics of Regression Analyses for Audit

**Module Description:** This module provides basic knowledge about regression algorithms and their potential use for forecasting purposes. The accuracy of forecasting methods are explained, and their evaluations are further discussed. The module implements regression in the audit domain, and illustrates how its results can be used as audit evidence.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant, Financial Advisor

**1.2.28 Module Code:** AIS-M28

**Module Name:** Advanced Artificial Intelligence in Accounting and Audit

**Module Description:** The module introduces three advanced Artificial Intelligence techniques, namely, Smart Analytics, IoT Robotic Process Automation, and NLP speech recognition. Students learn how these techniques are used using machine learning technologies. They also get familiar with use cases in business contexts.

**Sample Relevant Careers:** Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst