TOOLS AND TECHNIQUES

Legend

1 = Awareness only
2 = Basic competence and knowledge with support from others
3 = Independently competent in routine situations
4 = Independently competent in unique and complex situations

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
	CAE		Experienced		New Internal Audit staff		

OPERATIONAL AND MANAGEMENT RESEARCH TOOLS

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Can select and use the appropriate operational research techniques to tackle problems in which it is important to model the effects of stochastic influences: Markov chains or processes; stochastic simulation; queuing models; risk analysis; replacement, inspection, and maintenance models	2	2	2	2	2	1	0
Can apply -- or knows when to use -- optimization techniques to business problems such as linear programming, specially structured linear programs, dynamic programming, integer and mixed-integer programming, and heuristics for large-scale problems.	2	2	2	2	2	1	0
Can develop and manage operations, strategy, and process design.	2	2	2	2	2	1	0
Understands cycle time, capacity, and waiting time well enough to teach to others	2	2	2	2	2	1	0
Understands basic decision analysis well enough to teach to others	2	2	2	2	2	1	0
Understands simulation well enough to teach to others	2	2	2	2	2	1	0
Can identify the need for a specific expert in the operational research field	4	4	3	3	2	1	0
Can validate the use and understand the conclusion of work undertaken by an expert	4	4	3	3	2	1	0

FORECASTING

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Can apply methods for predicting and forecasting to support managerial decision- making about future actions	4	3	3	2	2	1	0
Can assess model causal and time series accuracy and robustness and apply them in a real-world problem domain	2	2	2	2	2	1	0
Can use the organization's forecasting tools and apply them correctly within a specific audit engagement	4	4	3	3	3	1	0
Can identify the need for a specific expert in the forecasting field	4	4	3	3	2	1	0
Can review the work of experts and validate that it appropriately supports the engagement	4	4	3	3	2	1	0

PROJECT MANAGEMENT

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Can manage any project within the IAA or audit project management within the organization, can apply to himself/herself most of the concept presented in the referenced model	4	4	4	3	2	1	0

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BUSINESS PROCESS ANALYSIS

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Can apply the six sigma approach or have it applied when necessary	2	2	2	2	2	1	0
Workflow analysis and bottleneck management, theory of constraints	2	2	2	2	2	1	0
Can organize and lead a team in mapping, analysis, and business process improvement	4	4	3	3	2	1	0
Can identify tactics that can immediately apply to improve the business processes	4	4	4	4	3	1	0
Can use process analysis tools such as Swim Lane Diagrams and review the work completed in them	4	4	4	4	3	1	0
Can identify and use analysis techniques that quickly identify process gaps	4	4	4	4	3	1	0
Can measure the efficiency and effectiveness of business processes	4	4	4	4	3	1	0
Can Identify and analyze internal and external cross-functional process interfaces	4	4	4	4	2	1	0
Can identify and prioritize business processes and depict or present them using flowcharting techniques (including flowcharting software)	4	4	4	4	4	1	0

BALANCE SCORECARD

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Can measure whether the activities of a company are meeting its vision and strategic objectives	4	4	3	2	2	1	0
Can apply a balance scorecard for the IA activity for evaluating the performance of the audit function	4	4	4	3	3	2	0

RISK AND CONTROL ASSESSMENT TECHNIQUES (INCLUDING SELF-ASSESSMENT)

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor (Less than 1 year)	Self Assessment
Understands risk theory well enough to teach, if asked, including defining risk; the relationship of risk to strategic, operational, or process objectives; risk tolerance, residual risk, and exposure; and impact assessment	4	4	4	4	3	2	0
Understands risk management techniques and cost-benefit analysis, including transfer, manage, or accept; and impact/cost-benefit analysis well enough to teach, if asked.	4	4	4	4	3	2	0
Understands control design and application well enough to teach, if asked, including defining control objectives; control design (e.g., preventive, detective, corrective; informal, formal); and cost/benefits	4	4	4	4	3	2	0
Understands control testing techniques well enough to teach, if asked, including manual and automated techniques	4	4	4	4	3	2	0

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GOVERNANCE RISK AND CONTROL: Tools and Techniques

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor	Self Assessment
Understand the common definition of internal controls	4	4	4	4	3	3	0
Can apply major control frameworks, such as: COSO, CoCo, Cadbury,	4	4	4	4	3	3	0
Can apply other control frameworks such as:, deeming award, TQM, 12 Attributes, deep learning framework, Baldridge Award, ISO 900, Westinghouse Award, Northrop Award	2	2	2	2	2	1	0
In the absence of a control framework in the organization, can design ad hoc control references for a specific audit and agree with the auditee on the reference used	4	4	4	4	3	1	0
Can define the concept of internal controls and understand the control framework used in the organization	4	4	4	4	3	2	0
Can train a team or client on the model used within the organization and compare with other alternatives	4	4	4	3	3	1	0

DATA COLLECTION AND ANALYSIS TOOLS AND TECHNIQUES

(sampling, data extraction/collection, data mining, correlation, trend analysis, interviewing, questionnaires, checklist)

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor	Self Assessment
Can apply the appropriate sampling techniques to the topic audited	3	3	4	4	3	2	0
Can analyze data trends, correlation, deviation, gaps, age, median, average etc.	4	4	4	4	3	3	0
Can apply key statistical methodology known as regression analysis in solving business problems: least squares estimation, residuals and outliers, tests and confidence intervals, correlation and autocorrelation, co linearity, and randomization and thus can input on construction of models, interpret of results, and critically evaluate assumptions	3	3	3	3	2	1	**0**
Can use benchmarking data adequately	4	4	3	3	2	1	0
Can use queries, organizations systems, or third party providers data extraction software	2	2	3	3	3	2	0
Can express requirements to a data warehouse expert for data extraction, transformation, and loading techniques	4	4	4	4	3	2	0
Can prepare for an interview, set the environment, and conduct the interview	4	4	4	4	4	2	0
Can build and use adequate questionnaire and surveys: structure, type of questions	3	3	4	3	3	2	0
Can identify the need for a specific expert in the data mining/analysis field	4	4	4	3	3	2	0

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PROBLEM SOLVING TOOLS AND TECHNIQUES

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor	Self Assessment
Can apply major problem-solving techniques such as: drill-down technique, cause and effect diagram, systems diagram, SWAT, PEST, 5 whys, affinity diagrams, Chunking, critical success factor, impact analysis, inductive reasoning, the ladder of inference and reverse brainstorming	4	4	4	4	3	2	0
Can apply other problem solving techniques such as Porter's five forces, Value Chain Analysis, SUP Analysis, the Banff matrix, Change Curve	4	4	3	2	2	1	0
Can select the appropriate problem solving techniques	4	4	4	4	3	2	0
Can select the appropriate problem solving techniques	4	4	4	4	3	2	0
Can identify the need for a specific expert/facilitator in the problem solving field	4	4	4	3	3	2	0

Computer Assisted Auditing Techniques (CAATS): When relevant and available

	CAE	Director	Audit Manager	Audit Senior Supervisor	Internal Audit Staff	New Internal Auditor	Self Assessment
Can use Microsoft office suite or equivalent (word processing, spreadsheet, presentation) effectively	4	4	4	4	4	3	0
Can use data extraction software (ACL, IDEA, Access etc)	2	2	3	3	3	2	0
Can use automated working paper software	3	3	3	3	3	2	0
Can use statistical packages including curve data deviation, average and medium data input calculation and prediction, age analysis, gap analysis, duplicate analysis, data stratification	2	3	3	3	3	2	0
Can recognize the need for CAATS and make the appropriate selection	4	4	4	3	3	2	0